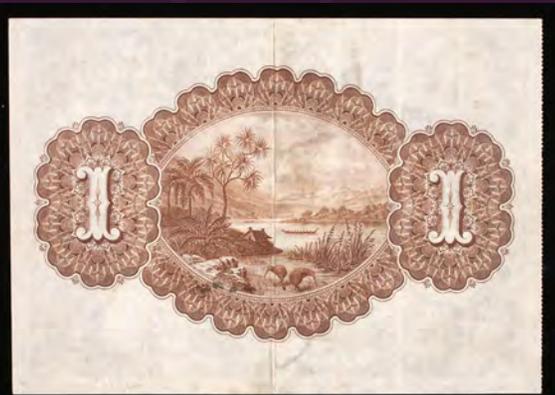


Volume 29

# Journal of the Numismatic Association of Australia



# Contents

<b>President's Report</b>	iv
<b>Editor's Note and Editorial Board</b>	vi
<b>Lloyd W. H. Taylor</b> The Karne Alexanders	1
<b>Michael E. Habicht, Andrew M. Chugg, Elena Varotto, Francesco M. Galassi</b> The so-called Porus medallions of Alexander the Great – crucial historical numismatic objects or clever counterfeits?	24
<b>Rachel Mansfield</b> A new coin type from Severan Jaffa	51
<b>Bruce Marshall</b> A slogan on a Late Roman Republican <i>denarius</i>	59
<b>Christian Cuello</b> Goths Franks or Romans? New perspectives on an old problem in Late Antique numismatics	66
<b>Andrew Clifford and Robert Tonner</b> New Zealand trading banknotes of the official issuers 1840–1934	79
<b>David Galt</b> The New Zealand medal for the New Zealand wars	96
<b>Richard A. J. O'Hair and Carmel S. O'Hair</b> Early Australian Highland Society medals and awards: The Geelong Commun Na Feinne Society	107
<b>Darren Burgess</b> 1942 Centenary of Sydney and Melbourne commemorative medallions	125
<b>Yuri Rapoport</b> The Unicorn Penny: A fifth variety of the 1931 Penny	149
<b>Darren Burgess</b> Numismatic gem: A very uncivil war	167
<b>Barrie M. Newman</b> Numismatic Gem: Coincidences and opportunities from a Roman coin in Egypt	173
<b>David J. Rampling</b> Book review: The Coin Cabinet - A cultural history of the numismatic collection in the Art Gallery of South Australia by Peter Lane	177
<b>Lee L. Brice and Jeremy Armstrong</b> Obituary: Matthew Freeman Trundle	179
<b>Ray Jewell Award Recipients</b>	181
<b>Paul Simon Memorial Award Honour Roll</b>	182
<b>Sponsors</b>	183
<b>Guidelines for Authors</b>	185

# President's Report

Our eighth biennial international numismatic conference (NAAC2019) was held at the State Library of New South Wales. National Organiser Walter Bloom and the local Organising Committee of Ken Sheedy and Gil Davis put together an interesting program, the fruits of which can be seen in this current volume of the Journal. Highlights included keynote speakers, Ross MacDiarmid, RAM Director (*The future of collecting and the role of the Royal Australian Mint*) and Claire Rowson, Perth Mint (*Mint Condition: New directions for numismatic conservation in Australia*). We were pleased to see a strong New Zealand contingent in Sydney and for the first time in some years the conference ran at a (slight) profit.

I am delighted to advise the winning of the 2019 Paul Simon Memorial Award by Graeme Petterwood. Graeme has been very active on the Tasmania numismatic scene, even when the Tasmanian Numismatic Society had spent a significant time in hibernation. Over this crucial period he kept the Society on the numismatic map with his publishing of the bi-monthly newsletter *Tasmanian Numismatist*. Graeme's contribution to the Society has been recognised with the McDonald Encouragement Award, 1994; R V McNeice Literary Award 1995, 1996; Lockwood Medal 1998; Tasmanian Numismatic Society Bronze Medallion 1996, 2000, 2003; TNS President's Award 2000; TNS Distinguished Service Medal 2013; and TNS Life Membership 2014. Graeme also won the André Fecteau Prize (Association des Numismates Francophones du Canada; <http://anfc.info/>) literary award. Congratulations Graeme from the Australian numismatic community.

The NAA website has experienced some serious issues, well beyond my expertise as Website Manager. After many unsuccessful attempts at fixing the problems, both through the hosting company and the website developer, the Association is looking to pay an expert to get the website back on-line.

We continue to enjoy sponsorship at a sustainable level, with Noble Numismatics (Gold), Coinworks, Downies (Silver), Drake Sterling, Mowbray Collectables, Sterling & Currency and Vintage Coins & Banknotes (Bronze) all contributing to ensure the Association's continued success. However expenses are rising and receipts are falling, even with the steady level of membership. On the positive side, many continue to take out ten-year memberships which is certainly good for the short to medium term.

I am appreciative of the support of Council and other NAA members throughout the year, and particularly our Secretary, Jonathan Cohen, and Treasurer, Lyn Bloom, who are pivotal in the running of the Association, and our Managing Editor, Gil Davis, for his ongoing work with the journal. The Association is looking to hold its 2020 AGM in Perth with those members in the Eastern States invited to skype into the meeting. With 15 NAA members in WA including three Office Bearers, we should have no difficulty making a physical quorum.

Finally, I was sorry to miss this year in Sydney (due to illness), my first missed conference since their inception in 2005, and also my first missed AGM since I took up the Presidency in 2006.

**Professor Walter R. Bloom**

President, NAA

[www.numismatics.org.au](http://www.numismatics.org.au)

# Editor's Note

This journal is the showcase of the Numismatic Association of Australia (NAA), the peak body for numismatics in the country. It provides a venue for excellent scholarship with a requirement that all articles either offer new material or fresh interpretations. All submissions are required to undergo a rigorous, double-blind peer review. The 29<sup>th</sup> volume is the largest we have produced and comes as a result of a decision to combine 2018 and 2019 into one volume, with many of the articles generated from the biennial NAA conference held on 6-7 April 2019. Once again, there is a good balance of modern and ancient interests reflected in a remarkably diverse range of topics. It is pleasing to see the contributions made on New Zealand numismatics.

We have a strong international editorial board who contribute their wisdom, experience and help. I thank them and mourn the premature loss of one of our number, the late Professor Matthew Trundle whose obituary appears at the end of the volume. I thank Professor John Melville-Jones and Mr John O'Connor for their skill and application in proof-reading the articles and Mr Barrie Newman for his dedication in producing the volume. As always, I thank Professor Walter Bloom, President of the NAA, for his personal support and encouragement in dealing with the myriad of matters that editing a journal entails.

This volume has some changes from its predecessors. At the conference we ran a session in which a number of speakers gave a short presentation on a 'Numismatic Gem'. This was highly successful and amusing. Two of the presentations have been turned into brief articles including the winning entry by Darren Burgess on a 'humble' token from the English Civil War, and a charming story by Barrie Newman on his first coin, which led him to a lifelong interest in collecting. We have also included a review by David Rampling of the important book by Peter Lane on the South Australian 'Coin Cabinet'.

There are five articles on modern topics. The first two are about New Zealand with Andrew Clifford and Robert Tonner presenting a history of New Zealand banknotes, superbly illustrated from Robert's own collection, and David Galt following up with medals issued for the New Zealand Wars. Richard and Carmel S. O'Hair take us into the world of early Australian medals issued by a Geelong Highland society, while Darren Burgess provides a full listing and discussion of the Centenary of Sydney and Melbourne Commemorative medals. Yuri Rapoport suggests, perhaps controversially, that there is a fifth variety of the 1931 penny.

There are also five large articles on topics spanning a thousand years of ancient history. Lloyd Taylor provides an exemplary study of the Alexander tetradrachms that he attributes to the Phoenician port city of Karne. From there, we segue into the vexed question of the so-called Porus medallions of Alexander, explored in detail by Michael Habicht and his colleagues. Staying in the ancient East, Rachel Mansfield reattributes a previously incorrectly identified coin type minted in the Levantine port city of Jaffa under the Severan emperors. Bruce Marshall discusses the introduction of slogans to Roman republican denarii. Finally, Christian Cuello discusses the extent to which imperial authority was conveyed in the 'imitation' coinage of 'barbarian' rulers in late antiquity.

All the articles contain significant research providing the volume with enduring value. They are well written and informative. I hope you enjoy reading them.

**Dr Gil Davis**

Managing Editor

[gil.davis@mq.edu.au](mailto:gil.davis@mq.edu.au)

## EDITORIAL BOARD

### **Managing Editor**

Dr Gil Davis  
Macquarie University  
editor@numismatics.org.au

Dr Clare Rowan  
(Roman coinage; ancient tokens)  
Warwick University  
c.rowan@warwick.ac.uk

### **Editorial Board**

Mr Philip Attwood  
(British and World Commemorative medals)  
Keeper of Coins and Medals  
The British Museum  
pattwood@britishmuseum.org

Dr Kenneth A Sheedy  
(Greek, Roman and Hellenistic)  
Australian Centre for Ancient Numismatics  
ken.sheedy@mq.edu.au

Emeritus Professor Walter R Bloom  
(Australian coins, medals and badges)  
Murdoch University and Western Australian Museum  
w.bloom@murdoch.edu.au,  
walter.bloom@museum.wa.gov.au

Dr Mark Stocker  
(Historical International Art)  
Te Papa Museum, Wellington  
mark.stocker@tepapa.govt.nz

Mr Christian Stoess  
(Mediaeval)  
Berlin Coin Cabinet  
c.stoess@smb.spk-berlin.de

Mr Peter Lane  
(Australiana)  
Art Gallery of South Australia  
pnj.lane@bigpond.com

**Technical Editors**  
Mr Barrie Newman  
Production Editor

Emeritus Professor John Melville-Jones  
(Greek, Roman, Byzantine and late antiquity)  
University of Western Australia  
john.melville-jones@uwa.edu.au

Mr John O'Connor  
Proof Editor

Mr Martin Purdy  
(New Zealand coins, medals and badges)  
Translate Ltd  
translate@ihug.co.nz

*Articles must comprise original research on numismatic material including but not limited to Australasian numismatics (coins, tokens, medals, banknotes) or ancient or mediaeval numismatics. Manuscripts can be emailed to any member of the Editorial Board in your area of research, along with a copy to the Managing Editor.*

# The so-called Porus medallions of Alexander the Great – crucial historical numismatic objects or clever counterfeits?

Michael E. Habicht, Andrew M. Chugg,  
Elena Varotto, Francesco M. Galassi

## Abstract

*The paper discusses the so-called Porus medallions associated with the military campaign of Alexander the Great (356-323 BC) in northern India, and specifically with the battle of the Hydaspes in the early Summer of 326 BC. At the present time, three types of silver medallion (of coin weight) and a unique gold medallion are known. We assess the propaganda message, and the doubts concerning the authenticity of some of these types.*

## Keywords

[Porus Medallion] [Alexander the Great] [decadrachms] [Mir Zakah] [elephant tetradrachms] [Oxus hoard] [Babylon hoard] [Hydaspes]

## 1. Introduction

In a recently held auction (Numismatica Ars Classica, Auction 114, 6-7 May 2019) several highly important coins of Alexander the Great were put up for sale. The coins are the medallion of the Indian archer / elephant (called the archer type in this paper and variously described as of tetradrachm or 2-shekel weight – see Holt, 2003, pp. 93-94, 99-100, 102-103, 108, 134, 136, 139, 149) and the elephant / chariot type (termed the chariot type – see Holt, 2003, pp. 94, 99-100, 108, 118, 136-137, 139, 149, 154-155). This discussion has additionally been stimulated by the discovery of a golden medallion, vaunted to the public as the ‘only authentic life-time portrait of Alexander the Great’ (Bopearachchi and Flandrin 2005; Bopearachchi and Holt 2011; Sunday Times, Sri Lanka 2011); Several reviews and articles by numismatists (Hurter 2006; Fischer-Bossert 2006) and Alexander the Great experts (Chugg 2007) questioned the authenticity of the gold medallion or even rejected it as a forgery. The recent offer of some of these coins for sale in spring 2019 provides a timely opportunity to reassess the whole mysterious story of this coin series. These rare and distinctive coins are considered to be of the highest historical importance and over the years several clusters of these coins have turned up, mainly with provenances from hoards discovered in the Middle East (Iraq, Pakistan and Afghanistan). The assessment of the medallions is however complicated by the lack

of formal archaeological documentation of their exhumation. It is distinctly possible that unrelated coins and forgeries were interspersed among authentic originals as they entered the international numismatic art market.

### 1.1. The Oxus hoard (1877)

The Oxus hoard was discovered around 1877 in Afghanistan by local dwellers who sold the gleanings to travelling merchants (Holt 2003, Ch. 2; Holt and MacDonald 2005; Pieper 2013, p. 625). On their way to Pakistan, the caravan was assaulted by Ghilzai raiders but at least a part of the treasure was seized by British colonial forces only to be dispersed again among local bazaars. A few years later, uniquely important medals of Alexander the Great came to the attention of scholars and were donated to museums, notably the supposed Decadrachm known as the Franks Medallion and believed to depict Porus and Alexander. The Oxus hoard is listed in the Inventory of Greek Coin Hoards (IGCH) as number 1822 (although the notes do not appear to mention the Franks Medallion specifically and the dating is 1887, when the travelling merchants dispersed the hoard).

### 1.2. The Babylon hoard (1973)

A large hoard of silver coins was found in Babylon (Iraq) in 1973, which had been buried in the years 323/322 BC, directly after the demise of Alexander the Great (Holt 2003, App. C; Pieper 2013, p. 625). The treasure contained seven decadrachms of the Porus type and a few of the tetradrachm types. The dating of the hoard contradicts older interpretations that the Porus medallion was minted some years after Alexander's death by Seleucus I (Jenkins and Küthmann 1972, p. 273). Martin J. Price gives more details about the hoard (Price 1991): It seems to be the cache of one individual or a small group of men, which reflects the entire itinerary of Alexander's campaigns (from Macedon, Cos, the Levant, Babylon, India and the return to Babylon). The hoard contains a coin of Cos and one of Philip II, some coins from Phoenicia, Babylonian imitations of Athenian coinage, Lion and Baal coins of Satrap Mazaeus (Babylon), a great number of tetradrachms of Alexander (all lifetime issues), eight regular decadrachms of Alexander the Great (same design as his regular tetradrachms with Heracles in a lion scalp on the obverse and a seated Zeus on the reverse) and an impressive and comparable number of Porus medallions. It is significant for the dating, that no coin in the name of Philip III is attributed to the hoard, which is now dispersed all over the world. The hoard cannot reasonably therefore date much after 323 BC. Most coins were sold on the art market in the 1970s, but some coins that entered the market in 1989 are also attributed to the Babylon hoard (although it is uncertain whether that is their true provenance). Regarding the Porus medallions that are the focus of this article, the following examples are recorded as having been found in the 1973 Babylon hoard:

- 7 five-shekel or decadrachm weight, evidently depicting Porus on his elephant (Figure 1). One more turned up in addition in 1989 (Price 1991, Plate 15, No.12). They were mostly sold in auctions. One of Price's 7 examples, Holt's F6, which entered the market in 1990, has since been deemed a forgery, its dies having been copied from a genuine example, Holt's E/A9, that had been auctioned in 1988 (Holt 2003, p.171-3).
- 11 two-shekel/tetradrachms of the archer type (Figures 2a and 2b): three turned up on the market in 1989, both in fine to very fine condition (Price 1991, Plate 15, No. 18 and 22). Two others were included in Gemini, Auction II, Jan 10, 2006, lots 145 and 146.
- And for the first time, 3 of the new two-shekel/tetradrachms of the chariot type were seen (Figures 3a and 3b). But only one was sold in the 1970s (Bank Leu 1975, 132, BSFN 1978, p. 405, 1), the two other coins appeared in 1989 and one of them found its way to the ANS collection (Price 1991, Plate 15, No. 26 and 27).
- The chariot type from the Prospero collection recently resold at the NAC auction is not recorded as being from the Babylon hoard. Price mentions that serious doubt was expressed regarding the authenticity of this new coin type at the time of its debut. It is recorded (Holt 2003, p. 92) that the 1973 Babylon hoard was found in two separate deposits – one context giving rise to greyish patinas and the other to reddish patinas. This dichotomy of the patinas is seen in most of the types found in this hoard including the Porus coins.

### 1.3. The Mir Zakah hoard (1947 and 1992)

The alleged find location of the hoard is Mir Zakah in Afghanistan, which is 50 km northeast of Gardez. The hoard was dredged from an ancient well on a pilgrim trail (about 100 km south-east of Kabul). The treasure was originally found in 1947 by local dwellers, and 13,000 coins were lifted from the well. Many coins found their way onto the art market (Fischer-Bosert 2006; Holt 2006; Pieper 2013). Shortly afterwards, a French excavation in 1948 was curtailed due to an unstable political situation. The first part of Mir Zakah hoard (Mir Zakah I) consisted of 5837 Indian bent bar coins, only 5 Greek examples, 2757 Graeco-Bactrian and Indo-Greek coins and numerous later coins (4390 Scythian, 29 Parthian and 37 Kushan coins). The most recent coin was struck under the Kushan ruler Vasudeva I (c. 192-220 AD) (Pieper 2013, p. 623-4) roughly dating the terminus for the deposition.

The Mir Zakah II hoard was discovered in 1993/94 by local looters who extended the excavation of the site. It is reported that over 550,000 coins were found, comprising an exotic mix of mints and eras, spanning a period from the 5<sup>th</sup> Cent. BC to the 2<sup>nd</sup> Cent. AD (Sunday Times, Sri Lanka 2011; Pieper 2013, p. 624).

The numismatist Osmund Boppearachchi was shown over 50 kilograms of coins from various cultures (Indian, Greek, Seleucid, Indo-Greek, Indo-Scythian, Indo-Parthian

and Kushans) in the markets of Peshawar, allegedly from the hoard, which was eventually dispersed all over the world. It has been suggested that three tons of this material is to be found in the tax-free zone of Basel Airport (Switzerland) (Pieper 2013, p. 624). The airport of Basel is located on French territory and the Swiss government does not list a tax-free zone for Basel (Zollfreilager Schweiz 2019), hence it must in fact be in either Geneva, Zurich, Chiasso, Lausanne or St. Margreten near Austria or else the coins are in France. Bopearachchi and Flandrin also found out that part of the Mir Zakah II hoard is in the Miho Museum in Koka (near Kyoto, Japan, [www.miho.jp](http://www.miho.jp); Bopearachchi and Flandrin 2005). Silvia Hurter on the other hand claimed, that at least some coins in the Miho Museum must be forgeries (Pieper 2013, p. 624).

It should be noted that everything we know concerning the Mir Zakah II hoard stems from only one person: Osmund Bopearachchi (Fischer-Bossert 2006). He reported unpublished types, previously unknown rulers and overstruck coins affording interesting insights into the chronology. From this hoard Bopearachchi also traced the famous 'gold medallion' of Alexander (Figure 4), which eventually found its way into private ownership in London. It is far from certain whether this is its true provenance or merely an invented pedigree.

Fischer-Bossert also criticised the first part of the monograph on the gold coin (Bopearachchi and Flandrin 2005) as a thrilling story in the style of Arthur Conan Doyle's *Sign of the Four* (although it should be allowed that Flandrin is a journalist writing in a popular style intended for a general audience rather than for specialist numismatists). Hurter also adds that the book was written in great haste as the authors returned in February 2005 from their trip to the location and the book was published and on sale in August 2005 (Hurter 2006).

## 2. Material

(Diameters and weights of key coin examples are cited in Table I)

### 2.1. The Regular Coinage of Alexander, and Ptolemy as Satrap

The very common regular tetradrachms of Alexander (see example in Figure 5) have an obverse that depicts Heracles wearing the scalp of the Nemean lion. This obverse had already been used on Macedonian coinage for around a century in Alexander's time. It alludes to the claim of the kings of Macedon to have been descended from the kings of Argos and therefore ultimately from Heracles. However, Alexander introduced a novel reverse for his tetradrachms. This is considered to be a seated Zeus holding an eagle, but it is now generally accepted that Alexander borrowed the design from the depiction of Baal on coins issued by Tarsus in Cilicia, probably after he had conquered Tarsus in 333 BC (Troxell, 1997, p.82). Late in his reign Alexander also minted (probably at Babylon) a small series of regular decadrachms with exactly the same designs as his

regular tetradrachms. After Alexander's death Ptolemy became the ruler of Egypt. Initially he continued to mint regular Alexander tetradrachms at Memphis, but perhaps as early as 321 BC and very probably by 320 BC he began to issue tetradrachms with a radical new obverse depicting Alexander himself wearing an elephant scalp. This is an extrapolation from the preceding Heracles-wearing-a-lion-scalp design on the one hand, whilst constituting a specific tribute to the freshly deified Alexander and his conquest of India on the other. It is tempting to suppose that this new obverse copies the head of a cult statue of Alexander commissioned to decorate his tomb, which Ptolemy had established at Memphis in 321-320 BC (Curtius 10.10.20, Parian Marble, Pausanias 1.6.3, Armenian Alexander Romance 283). For a while these new tetradrachms retained Alexander's seated Zeus reverse (with the interesting addition of a thunderbolt). However, around 315 BC Ptolemy revised the elephant scalp obverse and replaced the seated Zeus with Athena Alkidemos (Defender of the People) flinging a spear, perhaps commemorating the outcome of the battle in 317 BC for control of Alexander's empire between Queen Olympias, mother of Alexander, and Queen Adea-Eurydice, who was married to Alexander's mentally impaired stepbrother, Philip Arrhidaeus. The second type of elephant-scalp obverse has many distinct differences from the earlier type: the later aegis has scales, but the earlier none, the elephant's ear has a different design and the wrinkles on the later type elephant scalp are more concentrated into an area just above the trunk (see Figure 6 comparing the two types).

## 2.2. The Alexander-Porus type (Decadrachm or 5-Shekel) (see Figure 1)

**Obv:** Rider with Phrygian helmet attacking from l. with a long lance and an elephant that is moving towards the l. On the elephant are two men with beards and oriental caps. The one standing behind the neck of the elephant is aiming to throw a spear down at the rider, grasping another spear and a goad in his other hand. The seated mahout appears to have been speared by the rider's lance. In the field above the rider and elephant the monogram  $\Xi$  (Xi). A band of beading surrounds the scene.

**Rev:** Warrior standing with Phrygian helmet, linethorax, chiton towards l., holding a long lance in his left and in his extended right hand a thunderbolt. He is clearly identical with the rider on the obverse. A small Nike flying from l. crowns him with the laurels of the victor. In some well-preserved examples, in the field before the legs of the warrior the monogram BA, a combined capital Alpha and Beta, where the B is reversed and conjoined with the leading oblique of the A can be seen; on the Franks medallion there is a second faint B on the trailing oblique of the A – this was long ago read as BAB, encouraging the view that these coins were emitted by Alexander's Babylonian mint, but it is now understood with reference to other examples, and also the archer type, to have been an error only partially erased by the die cutter/engraver (Chugg 2007). Clearly, this fussiness suggests that it was important to the commissioner of these coins

that the B should precede the A, which is a clue as to its correct interpretation. Beading frames the scene.

**Remarks:** At least 10 coins are known, seven of them from the single 1973 Babylon hoard. Nine of the examples of this type have the same obverse die, but there are six different reverse dies in line with the fact that obverse dies for Greek hammered coins were fixed in substantial blocks and therefore were less liable to suffer cracking and other damage than the hand-held reverse dies and consequently lasted for several times as many strikes. This is a strong intrinsic reason to believe in the basic authenticity of this type, since it is most unlikely that a forger would be so sophisticated as to reproduce this imbalance in obverse versus reverse die numbers. These die numbers and their mix would tend to suggest that the Porus decadrachm was produced in as many as twenty thousand strikes (modern studies suggest that a good obverse die could last for 20,000 strikes (Taylor 2018, p. 25), but reverse dies were only good for about three thousand strikes (Taylor 2018, p. 27)). We would favour a more modest reverse to obverse die ratio of around three to one.

All preserved examples have pronounced signs of circulation and range from fine to very fine. None of the coins classified as genuine is extremely fine. There exist at least a further nine examples that have been condemned as forgeries on excellent grounds – traces of acid aging and suchlike indications (Holt 2003, p. 171-2). The patina ranges from grey-black to reddish black, reflecting the origin of most samples in the two separate 1973 Babylon deposits. The production quality is relatively poor: for example, many of the specimens have poorly centred strikes. However, the die engraving can be seen to have been very fine and detailed in the best-preserved examples: for instance, the Porus decadrachm that Holt references as E/A6 from the Nelson Bunker Hunt collection has exquisite detailing in the Alexander figure on its reverse: individual hairs of the helmet crest can be discerned. This begs the question of who engraved the archetypes for Alexander's coin dies. The usual answer is that it was Alexander's court gem carver, Pyrgoteles. He is named by Pliny along with Alexander's court sculptor, Lysippus, and his court painter, Apelles:

*The same ruler [Alexander] issued an edict that only Apelles should paint him, only Pyrgoteles should engrave him and only Lysippus should cast him in bronze: these artworks are famous thanks to many examples.* (Pliny the Elder, Natural History 7.125 & 37.8 & also Apuleius, Florida 7).

Since the three artists are stated to have been granted exclusive rights to create official images of Alexander, we should expect that they (or at least some of their skilled assistants) travelled to India with the rest of Alexander's retinue. Otherwise it would appear as though Alexander, a man deeply concerned with projecting his image before his subjects, renounced any ability to generate official portraits of himself during the

several years of his Indian campaigns. But in fact, the very existence of the Porus decadrachms tends to contradict this.

Alexander employed Eumenes (Athenaeus 434B) and Callisthenes (Ovid, *Ibis* 517-8 & Scholium) to maintain written records of his campaigns, the latter with propagandist features: clearly it was equally the king's intention that his similarly appointed visual artists should produce complementary visual records to complete the documentation of the expedition. The *quid pro quo* for their exclusive contracts must have been that they (or at least their assistants) should accompany him everywhere. Nor, having secured such exclusive rights, would it have made economic sense for the artists to abandon Alexander's service and their guaranteed revenue stream for the entire three years of the king's campaigns in India. There is also evidence that Greek artists and performers travelled with Alexander in India, because musicians (pipers, flautists and lyre players) accompanied his *comus* (revelling in the course of a procession) through Carmania just weeks after his dramatic emergence from the Gedrosian desert in returning from India and the king held theatrical, singing and dancing contests in the Carmanian town of Salmous immediately afterwards (Plutarch, Alexander 67). This was too soon after his unexpected return for artists from the West to have reached Alexander.

### 2.3. The archer type (tetradrachm or 2-shekel) (see Figures 2.a and 2.b)

**Obv:** A bearded archer with oriental cap and short tunic is shooting to r. The enormous bow rests on the ground. In the field behind his legs the monogram BA. Beading with large beads frames the scene.

**Rev:** Elephant standing to r., in the field beneath its feet a  $\Xi$  monogram.

**Remarks:** All reported coins show signs of protracted circulation and are preserved at between a good fair and a very fine state. The execution of the elephants sometimes seems somewhat clumsy, as if the die-cutter was not familiar with the anatomy of this kind of beast. However, bows as tall as their archers with their foot rested on the ground are recorded by one of the Alexander historians as having been used by the Indians at the Battle of the Hydaspes. Curtius 8.14.19: *Neither were even their arrows of any use to the barbarians. Since they were long and ponderous, unless the foot of the bow were braced against the ground, they could not be properly fitted and nor could the bow be readily drawn. As the soil was slimy, it hampered bow-bracing, so that whilst struggling to shoot they were overrun by their impetuous opponents.* (transl. Andrew Chugg) The patina of these decadrachms ranges from grey-black to reddish black reflecting the origin of these coins from the two deposits of the 1973 Babylon hoard. The coin offered at the NAC sale in 2019 is a piece known since 1974 and has been sold several times (NFA V auction 1978, Lot 82; NFA XXV 1990, Lot 82; New York Sale XXVII 2012: the Prospero collection, Lot 305). Thus, the coin cannot originate from the Mir Zakah II hoard and

the timing of its appearance tends to link it with the Babylon 1973 hoard. According to the NAC catalogue, the obverse die is the same as the one used for the coin mentioned by Price (1991, p. 70, Fig. 18).

#### 2.4. The chariot type (Tetradrachm or 2-Shekel) (see Figures 3.a and 3.b)

**Obv:** An elephant striding fast to r. with two riders on its back and neck. The one on the back holds a streamer on a pole, resembling a flag and the man turns his head rearwards as though being pursued by an invisible foe. The man seated on the neck of the elephant wears a high turban and holds a goad (*ankusa*) as also seen in the hand of Porus on the decadrachm obverse. Instead of beading around the scene, a solid line encircles the design (we are not aware that this is seen in any other issues associated with Alexander). No BA monogram is visible on the known examples.

**Rev:** A Quadriga driving fast towards the r. A driver and an archer standing in a light chariot construction, the archer is shooting to the r. at an invisible enemy. No  $\Xi$  is visible on any of the known examples.

**Remarks:** Very few coins of this type are recorded. We are aware of only three. The coin in the American Numismatic Society collection has a massively off-centre reverse face with a deep test cut. The coin offered at the NAC auction is better preserved. There are slight differences between the NAC and ANS coin dies especially on the chariot side. Holt records only one obverse die, but two reverse dies and he confirms that the NAC auction example (Holt ref. E/C2) has a different reverse die from the ANS coin (Holt ref. E/C3). However, Holt was not aware that the die axis of E/C2 is the aligned 12:00, although he records that both the other examples E/C1 and E/C3 have 12:00 axes (Holt 2003, p. 168). This is highly significant new information, courtesy of the recent auction. Two examples might have 12:00 axes by chance, but if all three known examples share a 12:00 axis, that strongly suggests it is a characteristic of the type. The particular significance of this fact is that both the Porus decadrachms and the archer tetradrachms have random coin axes (Holt 2003, p. 167-8). Furthermore, regular tetradrachms and decadrachms issued by Alexander's Babylon mint have random die axes from early in the history of this mint (die alignment seems to have been abandoned at Babylon from the Group 2 tetradrachms onwards following a relatively small Group 1 series (Taylor, 2018, p.24)) and all the Alexander series studied by Troxell had random die axes (Troxell, 1997, p.xvi). *The strong inference is that the chariot type was not issued by the same people as produced the Porus archer and decadrachm types and was therefore probably not issued by Alexander the Great.*

Once again, the patina ranges from grey-black (NAC piece) to reddish black (ANS piece). The ANS coin came into the possession of the society in 1990, after having been sold at Spink & Son Auction 71, Lot 48 (9<sup>th</sup> Nov. 1989). It is a matter of mere speculation

that it derives from the Babylon hoard (1973) (Price 1991). The NAC coin was sold in the past in the New York Sale XXVII, Lot 306 (2012, the Prospero collection). It is further recorded, that it was previously purchased privately from Spink & Son.

### 2.5. The gold coin depicting Alexander and an elephant (see Figure 4)

**Obv:** A beardless head of a young male wearing an elephant's scalp to r.; around his neck is an Aegis with scales. Fine beading around the scene. In the area of 3-5 o'clock there are faint traces of a double striking of the beading.

**Rev:** An elephant gently walking to the r., above its back the monogram  $\Xi$  (Xi). Below the feet of the elephant the other monogram BA in the familiar conjoined form. On close inspection, the line of the B at the side of the A is unusually small and contracted towards the leading oblique of the A. Compared to the silver coins described above, the elephant is outstandingly plastic and far more realistic than most other ancient coin depictions of this animal with the exception of its having been given bat-wing ears. Fine beading around the scene.

**Remarks:** The coin has a weight of 16.75 grams and a diameter of 19 mm (Pieper 2013, p. 625). Obverse to reverse position (die-axis) is 12:00 (Chugg 2007; Pieper 2013). This medallion or coin has a content of 97.7% gold, 1.8% silver and 0.4% copper plus the usual group of trace elements typical for ancient gold (Pieper 2013, p. 629): a non-destructive Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) analysis of the composition revealed more details of the trace elements platinum and palladium. In comparison to other gold coins of Alexander, Persian darics and gold staters struck in Bactria by Antiochos I and II and Diodotus, the 'Alexander medallion' has a higher concentration of palladium, suggesting that it was not made from Persian or Bactrian gold. The composition closely resembles the metal used in later Kushan empire gold dinars from the time of Vasudeva I (c. 192-220 AD). These later Kushan empire gold coins were made from Indian gold, after the Kushans had lost control over Bactria to the rising Sassanid Empire. It is quite likely that the 'Alexander medallion' was similarly made of gold from India.

### 3. Discussion

It is claimed by some numismatists, that the four different coin types are from a single series, telling the story of the battle at the Hydaspes (Jhelum River) where the huge battle between Alexander and Porus took place in 326 BC. It is generally and reasonably assumed that the decadrachm celebrates this victory of Alexander.

It is, however, a bold claim that the unique gold medal shows the only lifetime depiction of Alexander known to exist today. It is further claimed, that Ptolemy I adopted the general elephant scalp motif for his first series of tetradrachms during his time as satrap of Egypt shortly after Alexander's death c. 321 BC, but neglected to copy the gold Porus

design precisely (for example, the scaling on the aegis) until he produced a second series of elephant scalp tetradrachms around 315 BC, at which point it is supposed that he managed finally to perfect his imitation of the gold Porus obverse after a six-year-long artistic struggle by his engravers. A more straightforward alternative explanation to this step-by-step imitation of the Gold Porus design by Ptolemy would be that modern forgers ignorantly used the later and vastly more common elephant scalp design of Ptolemy as the model for their Alexander's lifetime counterfeit, thus creating an anachronism. The first series is rare today, because Ptolemy had most of the first series coins overstruck as second series coins, since he reduced the weight standard of his tetradrachms at that time: in effect a species of official coin-clipping.

### 3.1. The Alexander-Porus decadrachm type

The visual message for the ancient user of such a coin is obvious, if the individual had at least a faint knowledge of the heroic deeds of Alexander the Great: Alexander on Bucephalus attacks Porus on his elephant. Indeed, the man standing behind the neck of the elephant appears from the position of his projecting foot to be exceptionally tall, which is the main physical characteristic of Porus reported by the Alexander sources. The reverse depicts the outcome: Alexander as victor, holding the thunderbolt-weapon of his purported heavenly father Zeus, a thunderstorm having helpfully masked Alexander's advance across the River Hydaspes to confront Porus.

The decadrachms of Porus have been known since the 19<sup>th</sup> century and must be considered to be a genuine type, albeit there are some counterfeits on the art market (Holt, 2003, p.171). Some coins (notably the Franks medallion in the British Museum) must come from the Oxus hoard, unearthed by a spate of the River Oxus in 1877 (Holt, 2003, pp. 29, 31, 35-37, 40-45, 53-54, 94, 96). Others are from the 1973 Babylon hoard (Holt, 2003, pp. 92, 140, 147 and Appendix C) and more are rumoured to have emerged from Mir Zakah. The other specific reasons to consider the Porus decadrachms to be authentic include:

1. The genuine examples exhibit the correct imbalance between obverse and reverse dies.
2. They exhibit immaculately correct details of dress and equipment for the Alexander figure including the Phrygian helmet (like the helmet found in the tomb of Alexander's father) with two feathers (cf. Plutarch, Alexander 16.7: *Alexander was easily recognisable by his shield and by the crest of his helmet, which had wonderfully tall white plumes fixed to either side of it*), the corselet and the cavalry sarissa or xyston.
3. They have excellent and well-documented provenance from more than one independent source.

4. In the 1973 Babylon hoard they were found associated with about the same number, 8 according to Price (1991), of regular Alexander decadrachms using the Herakles with a lion-scalp obverse and seated Zeus reverse and the weight ranges of the two Alexander-decadrachm types are very similar. This evidence, taken together with the fact that the 1973 Babylon hoard dates to about the time of Alexander's death, strongly suggests that both types were minted under his direction. It is virtually certain that the standard decadrachms are authentic, so the Porus decadrachms should be granted the same degree of authenticity by virtue of their association in this hoard and their common standard of weight and flan/planchet dimensions. It is perfectly reasonable to describe these Porus coins as decadrachms in view of the fact that Alexander used the Attic drachm standard for his regular decadrachms.
5. The Porus decadrachms tie in perfectly with details of Alexander's campaign against Porus such as the assistance in masking his fording of the river that he received from a thunderstorm (e.g. Plutarch, Alexander 60.3-4 on the battle against Porus: *Then, on a dark and stormy night, [Alexander] took a part of his infantry and the best of his horsemen, and after proceeding along the river to a distance from where the enemy lay, crossed over to a small island. Here rain fell in torrents, and many tornadoes and thunder-bolts dashed down upon his men; but nevertheless, although he saw that many of them were being burned to death by the thunder-bolts, he set out from the islet and made for the opposite banks.*) These designs also reflect the known propaganda of Alexander's family in associating the reigning Macedonian monarch with Zeus, through the thunderbolt in this instance, and this link with the real Alexander is backed up by the existence of an ancient bronze statuette of the king carrying a lance and thunderbolt and an ancient gemstone engraved with a similar depiction of Alexander (Stewart 1993, plates 8a & 70).
6. The manufacture and patina of the genuine and well-documented examples meet all the stringent numismatic tests and criteria regarding fake-detection: there is enormous skill and experience at detecting fakes in the numismatic field and at least nine forgeries of the Porus decadrachm have been noted (Holt, 2003, p.171), but at least ten examples appear physically to be genuine (Holt, 2003, p.167).

### 3.2. The Archer Type

The coin offered at the NAC sale in 2019 was personally inspected by one of the authors, using a watchmaker lens and natural light. The observations are that there are some areas of weak minting, the head of the archer is not fully minted out and the patina is spotty. The coin flan is quite thick (c. 3mm) and the minting flawed. The reverse with the elephant has some odd details, since its ears resemble the wings of a bat. The flan rim is very flat and regular, with clear edges (about 90°) more resembling a modern machine-made coin and quite different from the other Greek coins in the same auction.

The visual message is only evident if one knows the details of Alexander's campaign in India and the weaponry used against him. One might ask, why the Macedonians depicted their foes this way and not as defeated enemies. The answer is that it was Alexander's deliberate policy to vaunt the prowess of his Indian enemies, because he had been accused by his own uncle a couple of years earlier of only having triumphed over the Persian Empire due to the weakness of its resistance. Alexander had been stung by a public comment by his uncle, Alexander of Epiros, that his uncle had fought against men in Italy whereas Alexander had only had women to oppose him in Persia (Curtius 8.1.37). Furthermore, Curtius 8.14.14 quotes Alexander as stating of Porus's army during the Battle of the Hydaspes: *At last I behold a trial worthy of my spirit, since I am up against both monstrous beasts and warriors of prowess.* (trans. Andrew Chugg). So, the king is actually quoted glorifying his opponents in India by one of our best ancient sources.

The style and the depicted individuals are non-Greek and have no direct connection with Greek themes at that time. The connection needs to be made from a modern knowledge of the source texts on Alexander the Great. Some might also suppose that the idea of designing a set of coins telling a story from different angles is a modern approach, but actually Curtius in his *Deeds of Alexander* also has episodes where he describes parallel events at the court of Darius. The straightforward visual message for the average individual in antiquity would have been the depiction of heroic oriental Indians fighting an invisible enemy, although even a slave in Mesopotamia would have known that Alexander had defeated these warriors. But some have been concerned that the message of the coins would have been unclear to *hoi polloi*: the so-called 'Homeric groups' in sculpture, requiring literary knowledge of famous myths, is a late Hellenistic concept, not in existence in 323 BC.

Wilhelm Hollstein (1989) suggested an interesting solution for this problem: that as the coin type does not present the topic of victory by Alexander, the king would not have ordered the issue. He argues that its visual propaganda was not intended for the dwellers of Babylon, Susa or Persepolis, but for local dwellers in northern India and the soldiers in the army of Alexander. According to Curtius Rufus (8.12.15-16), the local ruler Taxiles handed over 80 talents of silver as a sign of friendship to Alexander. Curtius named it "signatum argentum", silver marked with a stamp (Curtius used the term in other places like that, e.g. ...*pecuniae signatae*... 3.13.16 and ...*L milia talentum argenti non signati forma*... 5.2.11). Hollstein speculated that the whole Porus minting was initiated by Taxiles for Alexander, as the usual inscription that appears on the Macedonian king's issues (ΑΛΕΞΑΝΔΡΟΥ) is entirely absent. While the depiction of Alexander would at least partly explain the absence of his name, it would make no sense on the "2-shekel" coins. The "2-shekel" coins would therefore depict not the foe (the army of Porus), but his ally Taxiles. In addition, he argued that the overall inferior production quality of all

the Porus coins speaks for a local issue, perhaps with the support of die cutters in the army of Alexander. Therefore, he supposes that the coins were minted before the Battle of the Hydaspes, as they depict the main units of the Indian armies: infantry with long bows, chariots, cavalry (Alexander himself) and elephants. The infantry in the end did not play a decisive role, and the elephants of Porus got out of control, inflicting collateral damage upon their own troops.

However, as we have already noted, the recorded annals of history refute Holstein's speculation that Alexander would not have wished to celebrate his enemy's prowess. Furthermore, Alexander befriended Porus immediately after the battle and made him his ally and vassal, subsequently considerably enlarging his realm. Therefore, vaunting his opponent's military skills in the archer type coin issue is precisely consistent with Alexander's stated policy. Nor is it possible to separate the origins of the archer type from the production of the Porus decadrachms, because of the shared BA monogram and the Xi and the fact that the two types were associated in the 1973 Babylon hoard and because both depict Indian troops. Since, as we have seen, it is highly probable that the Porus decadrachms were issued by Alexander himself, because of their close association with the standard Alexander decadrachms and because they clearly do depict and celebrate Alexander's victory over Porus, we are forced to conclude that the archer type was similarly issued by Alexander at the same time as the Porus decadrachms, and there was no reason from Alexander's point of view for them not to celebrate the forces of Porus, who had now become Alexander's own soldiers. Nor is it tenable that the Porus decadrachms depict events before the battle, since they show Alexander's lance transfixing the mahout on a fleeing elephant and the archer type clearly depicts war bows *in use*. The archer type has only three known obverse dies but nine reverse dies (Holt, 2003, p.167-8), so it exhibits the proper and genuine ratio of dies in common with the Porus decadrachms. It also exhibits the random die axis that is seen in the Porus decadrachms and in regular coin issues by Alexander. Furthermore, its examples exhibit the mix of reddish and greyish patinas that is characteristic of the two separate deposits in the 1973 Babylon hoard. Overall, it therefore seems necessary to conclude that the archer type is another small commemorative issue by Alexander himself that was produced simultaneously with the Porus decadrachms and is completely genuine and celebrates the king's victory in the Battle of the Hydaspes against a worthy opponent.

An objection to this conclusion has been the fact that the archer types have a weight distribution significantly below the standard Attic tetradrachm denomination of 17.2g. We have accurate weights for 9 of the 11 examples thanks to the diligence of Holt (2003, p.167-8). But is it actually true that the weight range of the archers is inconsistent with having been minted on the Attic standard? All examples show significant wear in parallel with genuine examples of the Porus decadrachms and careful analysis reveals that the distribution of the archer type weights below the tetradrachm standard closely parallels

the weight distribution of the Porus decadrachm type below the decadrachm standard, and the width of the spread of both distributions is consistent with the wear implied by assuming both types were minted on the Attic drachm standard. Furthermore, the archer type has roughly the same shape and size of flan as the regular tetradrachms of Alexander the Great, a point of some significance, since flan/planchet sizes were rather variable in the early Hellenistic period.

We are also fairly certain that the Porus decadrachms were minted on the Attic standard, since, as we have already pointed out, their weight distribution is extremely similar to that of the regular Alexander decadrachms, which must have been minted on Alexander's Attic standard (matching their tetradrachm archetypes). Therefore, the fact that the archer tetradrachms have a virtually identical wear distribution to the decadrachms on the assumption that both were minted to the Attic standard shows firstly that they too were indeed very probably minted on the Attic standard. Secondly, the fact that the wear distributions match so closely means that the circulation history of the Porus decadrachms and the archer tetradrachms must have been extremely similar. These two facts, added to the existing similarities in respect of the subject matter of the designs, the BA monogram and the Xi, enable us to conclude confidently that both the archers and the Porus decadrachms are genuine and were minted by Alexander the Great to commemorate his victory over Porus. It should be added that the extent of the circulatory wear on examples from the 1973 Babylon hoard dating to the time of Alexander's death suggests that the coins had already been in circulation for some years prior to his death. That would tend to push their minting back to the immediate aftermath of the Battle of the Hydaspes, when indeed their propaganda value to Alexander as a confirmation that he could triumph against very powerful enemy forces would have been at its highest pitch.

A corollary is that the BA monogram should be read as a contraction or abbreviation of ΒΑΣΙΛΕΩΣ ΑΛΕΞΑΝΔΡΟΥ (of King Alexander), which was Alexander's preferred legend on his regular tetradrachms and decadrachms in the latter part of his reign (reflecting his adoption of the title King of Asia after the Battle of Gaugamela). Other explanations of the monogram, such as Andrew Stewart's suggestion (Stewart, 1993, p.205) that it might indicate the satrap Abulites, are rendered most unlikely by the close connection between the Porus decadrachms and the standard Alexander decadrachms revealed by our analysis.

It may also be added that the Macedonian shield obverse bronze coins (see Figure 7 in which the shield emblem is an eight-pointed star), which were once believed to have been from the Antigonid era, are now generally accepted as having begun to be minted under Alexander the Great (Price 419A; HGC 3.1, 965 (Alexander IV)). The letters BA

are commonly seen on the reverse of these coins on either side of a helmet and again we should infer that ΒΑΣΙΛΕΩΣ ΑΛΕΞΑΝΔΡΟΥ was intended.

### 3.3. The Chariot Type

The second coin offered at the NAC sale in 2019 was also personally inspected by one of the authors. The observations are: the coin is notably thicker (c. 5mm), than the relatively thick regular tetradrachms of Alexander; once again, the flan rim is very flat, regular and has an angle of c. 90° resembling a modern coin (forgers, working with catalogues, without having seen a great number of ancient coins may often commit such clumsy errors at the rim, as the sides of coins are usually not depicted clearly in publications); details of the obverse are weak, especially the head of the second man on the elephant with the 'flag'; the reverse has a massive flan fault, a large piece of silver is broken out at the chariot, and a smaller breakout of material in the bodies of the horses can also be discerned; the heads of all horses are more rubbed off than the rest of the coin; the border around the scene is truly a continuous line, an uninterrupted curve and not merely a thin and worn band of beading (this is quite odd and without parallel within Alexander's coinage); due to its exceptional thickness, the flan diameter is only 22mm, significantly smaller than the regular flan size for Alexander tetradrachms of around 25mm diameter; the extended arm of the archer is not at all anatomical and just a bar rather than a true limb; the wheels of the chariot and the feet of the horses are not on the same ground level, giving the impression of a flying chariot (such a childish configuration error is hardly ever seen in authentic ancient Greek coins). The overall impression is of a totally non-Greek style coin. If the coin is indeed ancient, it should be regarded as a local minting of an Indian ruler in alliance with Alexander the Great. The reddish patina seen in the catalogue image is not discernible in natural light. The coin actually has a dark grey patina. There are significant concerns regarding the authenticity of this coin type. We summarise some of them:

- Only one coin has been attributed to the Babylon hoard, while the two others mentioned by Price in 1991 turned up only in 1989. It is quite unclear if they really were derived from the hoard. Thus, the whole attribution to the Babylon hoard depends on just one coin; and the hoard was distributed before being reliably documented. If it turns out that this single attributed coin might come from somewhere else (unrecorded provenance), the entire connection with an ancient, dated hoard would collapse.
- The usual beading around the scene is replaced in all known pieces with a continuous line. This design feature is atypical for an ancient Greek coin of this period.
- The typical monograms of the other coin types connected with Porus are invisible (or absent) as Hollstein highlights (1989, 12): the connection of this coin type is established only by motif and style, which can easily be forged to create exactly such

a connection. In a way it is like an unsigned painting in the style of a great master, intended to deceive the experts.

- The style is non-Greek and the design depicts non-Greeks.
- Whereas the elephants and their riders clearly echo the scene on the reverse of the Porus decadrachms, the two-man chariots cannot be those famously deployed by Porus during the Battle of the Hydaspes. We have an exact description of his chariots from an eyewitness (probably Onesicritus of Astypalaea) which has been preserved by Curtius 8.14.2-3: *Those contingents that [Porus] sent forward were commanded by his brother, Spitaces, with the greatest threat being posed by the chariots, each having a complement of six men. Two of these bore shields and a second pair were archers, stationed on either side of the vehicle. The others were the charioteers, though not disarmed by their duties; for in close combat they would lay aside the reins and fling showers of javelins upon their enemies.* (trans. Andrew Chugg).
- The propagandistic message for an ancient individual is not clear, except that it might be Alexander celebrating the prowess of his opponents at the Hydaspes, but that would require that the chariots were those used in the battle and they are not.
- All three known examples of these coins have a 12:00 regular die axis, which is inconsistent with an issue by Alexander, yet, if genuine, it has to be an issue by Alexander because of the alleged association with the Porus decadrachms and archer types in the Babylon hoard and because the elephant scene obviously echoes the elephant scene on the Porus decadrachms.
- The coins seem to be lacking any confirmatory metal analysis, as suggested by Bracey (2011) to test such coins with unclear provenance.

Thus, we see there are contradictions thrown up by the coins themselves and the reported facts of the coins' discovery, which would be best resolved by concluding that they are fakes. Based on such concerns, and the fact that the coin type is far from being archaeologically documented in a sound manner, their authenticity can be best classified as 'dubious'. However, some features speak for authenticity: the possible association with the Babylon hoard; the fact that the ANS example is off-centred, badly worn in key areas and has a huge test gouge, all features that undermine market value and are therefore anathema to most forgers (although the ANS example could be explained as a test piece by forgers as yet poorly practiced in coin hammering techniques). If this type is indeed ancient, we need to look for an alternative explanation for its production than that it formed a part of Alexander's Porus tetradrachm production. Perhaps Alexander's Porus coinage inspired the local allies of Alexander to mint coins of the chariot type along the lines proposed by Hollstein, who might even be right that these coins are the silver given to Alexander before Battle of the Hydaspes by Taxiles (in which case the elephant designs on the Porus decadrachms were inspired by the chariot type rather than vice

versa). Or else Stewart could even be right that they are the coins minted for Alexander by Abulites, although in that case ironically lacking the BA monogram.

### 3.4. The Gold Coin Depicting Alexander and an Elephant

The gold coin has had an ongoing debate on its authenticity. The review article of Robert Bracey (2011) discusses the various positions. Frank Holt argued that one should be prepared to accept a dubious coin to avoid the more severe error of wrongly dismissing a genuine coin. Other positions by experts are problematic, e.g. Andrew Stewart argued that the coin is genuine as ‘fakers are seldom intellectually adventurous, still less brilliantly intuitive’ (Bracey 2011). But Bracey rightfully criticised the position that academics are smarter than forgers, too smart to be fooled. For example, if a forgery fulfils the wildest dreams of an expert, caution might be thrown overboard in the hope of being able to present a sensation. Bracey further undermines the coin of Alexander with the observation that Boppearachchi demonstrably presented other forgeries as genuine (Bracey 2011, n.1). François de Callataÿ (2013) dismissed the extreme positions and argued for a categorisation of ‘possible’. The results are similar. It is possible that the coin once was part of the Mir Zakah hoard. It is also possible that a coin can be well centred, have a 12:00 die axis and no signs of circulation. 38% of the Porus decadrachms are also in a 12:00 die axis (de Callataÿ 2013). Only the product of the probabilities, giving the likelihood of all factors being true simultaneously, is unlikely (just as throwing a die for a single six is 1 in 6, but six successive sixes is highly improbable:  $1/6^6$  or 0.0000214); de Callataÿ suggests that the overall chance of the coin being genuine is 1 in 500 (interestingly, his main concern is about the curiously carved BA monogram). So, although the many arguments for forgery are individually inconclusive, the cumulative likelihood of the gold Porus being a genuine coin is close to nil.

Other experts have expressed various concerns summarised as follows:

- This unique coin is without any certain pedigree, everything depending on a Pakistani informer claiming that he had seen the coin in the Mir Zakah II hoard (Fischer-Bossert 2006; Hurter 2006).
- The coin is in about mint state in stark contrast to the worn condition of all genuine examples of the related types with not the slightest sign of circulation, although this is not impossible (de Callataÿ 2013). But how can a coin type with no evidence for it having entered circulation be the model for the coinage of Ptolemy I in far off Egypt and how could an uncirculated coin end up in an ancient well in remote rural Afghanistan? The story of this coin would have to be quite different from that of the other Porus types, while nevertheless it would meet up with some of the silver Porus types again in the well hoard.
- The inscription is neither Alexander’s standard imperial title (ΒΑΣΙΛΕΩΣ ΑΛΕΞΑΝΔΡΟΥ), nor does it follow the Porus-type pattern of one monogram on

each face, although it obviously begs us to connect the coin with the Porus type issues. The coupling of the monograms on one side is suspicious (Fischer-Bossert 2006).

- The weight of 16.75g is quite ambiguous; it could be a 2-shekel coin or a tetradrachm, but it is in mint state, so it is definitely not a tetradrachm or distater on the 17.2g Attic standard used by Alexander. For de Callataÿ this weight does not fit a tetradrachm standard, but rather a double daric. Its falling outside the weight standard of regular Alexander coinage should excite concern. Why would Alexander have changed his weight system for such a coin?
- The iconography has unusual features (Fischer-Bossert 2006). The elephant's scalp looks as though it has been copied from the second Alexander elephant scalp tetradrachm series of Ptolemy I minted after 315BC, a common type in contrast to the rare first series minted from 321-316BC, of which a numismatically naïve forger might not have been aware (Hurter 2006; Chugg 2007). The first elephant scalp tetradrachm series of Ptolemy has a plain aegis around Alexander's neck and only acquires a scaly aegis like the 'gold medallion' in the second series. It is virtually impossible that the medallion could have served as a model for Ptolemy, because he would have had to evolve an originally different design to match the gold Porus design in 315BC, which creates a horrible anachronism for a gold Porus supposed to have been minted under Alexander.
- The Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) revealed that the medallion is made of the same gold used by later Kushan Dinars. De Callataÿ (2013) emphasized the importance of such technological examination.
- The head resembles the head of Heracles on the Tetradrachms of Alexander minted in Memphis.
- We can add here that the 19mm diameter of the gold Porus is very close to the standard 18mm diameter of Alexander's regular gold staters, which it is odd because it is twice their weight and the flan is therefore twice the thickness: all other Alexander issues (notably including the silver Porus coins) scale-up both the diameter and the thickness proportionately so as to maintain the overall shape of the flan (ratio of the diameter to the thickness). For example, the Porus decadrachms are 2.5x the weight of the Porus tetradrachms, so the diameters of the former (~35mm) are wider than the latter (26mm) by a factor of the cube root of 2.5 (=1.357). If this scaling had been applied to the gold Porus coin as a distater, it should be 23mm in diameter. Alexander did in fact issue regular gold distaters of ~23mm diameter on a 17.2g Attic tetradrachm standard.

In conclusion, numerous experts have assessed the 'gold medallion of Alexander' to be a fake (Fischer-Bossert 2006; Hurter 2006) or at least highly dubious (Chugg 2007; de Callataÿ 2013).

#### 4. Conclusion

The Decadrachm of Porus is confirmed as being a genuine coin type commissioned by Alexander for his troops and possibly minted in India shortly after the Battle of the Hydaspes, although a minting in Babylon around 326/5 BC is also feasible. However, the low quality of production (poor centring etc.) and the high degree of wear by the time of the Babylon hoard in 323/2 BC argues for an early striking “in the field”. Nevertheless, Alexander adhered strictly to his Attic weight standard for the flans for these ten-drachm coins, as he did for all his coin issues. The weight distribution and the flan shape of the Porus decadrachms precisely match the weight distribution and flan shape of the regular Alexander decadrachms and both decadrachm types were found in matching numbers (seven or eight examples of each) in the 1973 Babylon hoard dating to 323/2 BC.

The archer-elephant type is also confirmed as a genuine type and was also minted by Alexander the Great together with the Porus decadrachms. The justification is the close parallels between this type and the Porus decadrachm type in terms of hoard provenance, weight distribution, flan shape, motifs closely associated with the Battle of the Hydaspes, the usage of BA and E monograms and the unusual combination of a high standard of engraving with poor production quality. It is also highly consistent with Alexander’s recorded propaganda aim of vaunting the prowess of the enemies whom he had defeated.

Lacking proper provenance and in view of stylistic flaws, the elephant-chariot type remains dubious until further evidence for its genuine antiquity can be presented in the future. We have shown that it is not part of the Porus series issued by Alexander, since the recent auctioning of the third known specimen has confirmed that the die axes are all 12:00 aligned and both the Porus types and the vast majority of Alexander’s other coinage have random die axes. Additionally, its flan shape is substantially thicker than other Alexander tetradrachms including the Archer type. This is further confirmed by its lack of BA and E monograms, its strange borders and the 2-man chariots contrasting with the 6-man chariots reported to have been deployed in the Battle of the Hydaspes. It might, however, represent a local issue by some other potentate, who was either inspired by Alexander’s Porus issues or had perhaps even provided part of the inspiration for them, if issued by Taxiles.

In the case of the unique gold coin, we can present two possible scenarios based on the facts in our possession:

1. The coin is genuine. Alexander ordered its minting in northern India after the battle against Porus together with the decadrachm and Archer Porus types. He may have used gold from a mine in the vicinity. Alexander’s general Ptolemy kept one or two of

these gold Porus coins as mementos and he adopted a modified version of its obverse for the design on the obverse of his new series of silver tetradrachms minted from about 321 BC shortly after he became the ruler of Egypt in 323 BC. However, in 315 BC, having perhaps regretted deviating from the deified Alexander's original obverse elephant scalp design, he minted a second series of elephant scalp tetradrachms in which he reverted to a design that more perfectly imitated his souvenir gold Porus coins for a revised obverse. Also, in this general period, the surviving gold Porus coin was injected into the wishing well at Mir Zakah, perhaps by its original owner from Alexander's retinue. In the well it met up again with some examples of the silver Porus decadrachms.

2. The gold coin is a modern forgery. A first argument against the authenticity of this alleged 'gold medallion of Alexander' is the metallurgical composition (Pieper 2013, p. 629), which reveals that the forger would have been based in India or Pakistan and used some melted-down golden dinars of the late Kushan empire (quite a common coin with a modern value only a little above its intrinsic gold value, circa one hundred dollars per specimen) to produce the counterfeit. The Kushan coins were minted around four centuries after Alexander's time, so it is unlikely that the mines from which their gold was extracted would have been open in Alexander's era. The forger might have taken the inspiration for the portrait of Alexander from the famous Pompeii mosaic and/or the Heracles head from the Alexander tetradrachms from the Memphis mint and/or the small ivory head of Alexander from Tomb II at Vergina. In particular the elephant's scalp was copied in chronological error from the *second* elephant scalp tetradrachm series of Ptolemy I. Additionally, the weight standard for the gold coin is lighter than the weight standard for the silver Porus coins minted by Alexander in India and the diameter was not scaled up from Alexander's staters according to his standard practice of maintaining the flan shape for higher denominations including his regular gold distaters. Therefore, the gold coin is unlikely to have been minted by Alexander. A spurious provenance from the Mir Zakah hoard was claimed by the forger's agents and was believed and endorsed without supporting evidence or documentation by Bopearachchi and various other coin experts and historians, but in fact the mint state of the gold Porus is at odds with the view that it was transported by horse or cart or on foot over 500 miles from India to Mir Zakah, especially considering that Porus decadrachms said to have come from the Mir Zakah hoard are all well-worn.

We leave the reader to choose between these two hypotheses. In the recent NAC Auction 114, the archer type coin realised a hammer price of 70,000 Swiss Francs against a pre-auction estimate of 50,000 Swiss Francs. The chariot type example realised a hammer price of 55,000 Swiss Francs against a pre-auction estimate of 30,000 Swiss Francs. In

both cases it would seem that purchasers invested a high degree of confidence in the fidelity of these coins.

## Authors

*Michael E. Habicht<sup>1</sup> studied classical archaeology and Egyptology at the universities of Zurich and Basel, earning his PhD in bioarchaeology at Flinders University, where he holds the title of Senior Research Fellow. He also worked for several years in the field of ancient numismatics. He published several studies on famous characters from the classical world and ancient Egypt, e.g. the identification of Queen Nefertari and the diagnosis of a rare syndrome observed in the skull of Queen Meresankh III.*

*Andrew M. Chugg<sup>2</sup> is a graduate of the University of Cambridge. He is the author of papers on Alexander's tomb published in Greece & Rome and The American Journal of Ancient History and a paper on Alexander's royal journal published in the Ancient History Bulletin. He is also the author of four books: The Lost Tomb of Alexander the Great, Alexander's Lovers, The Quest for the Tomb of Alexander the Great and Concerning Alexander the Great: A Reconstruction of Cleitarchus. He has also appeared in several TV documentaries on Alexander the Great, including the Alexander's tomb episode of National Geographic's Secrets of Egypt series and the same channel's Mystery Files. Andrew is also the author of several articles on ancient coins associated with Alexander the Great in The Celator magazine including an article on the Gold Porus coin in Vol. 21, No. 9, September 2007.*

*Elena Varotto<sup>1,3,4</sup> studied archaeology and bioarchaeology at the Universities of Catania and Bologna (Italy). She holds the title of Research Fellow (Level B), is currently Deputy Director of the FAPAB Research Center in Avola (Sicily, Italy) and works as a forensic anthropologist. She published various articles on paleopathology and anthropology.*

*Francesco M. Galassi<sup>1,3</sup> studied medicine in Bologna (Italy). He currently holds the title of Associate Professor at Flinders University (Australia) and Director of the FAPAB Research Center in Avola (Sicily, Italy). He has an outstanding publication record on classical antiquity and paleopathology, ranging from medical analysis of the wounds of Alexander the Great, the diseases of Julius Caesar and many other philological studies. He was also included in the list of the most promising European researchers under 30 by Forbes Magazine in 2017.*

---

1 Archaeology, College of Humanities, Arts and Social Sciences, Flinders University, Adelaide, SA 5001, Australia

2 Independent researcher, United Kingdom

3 FAPAB Research Center, Piazza Umberto I 5, 96012 Avola SR, Sicily, Italy

4 Department of Humanities (DISUM), University of Catania, Piazza Dante 32, 95124 Catania CT, Sicily, Italy

## Bibliography

- Bopearachchi, Osmund and Philippe Flandrin. 2005. *Le Portrait d'Alexandre Le Grand*. Paris.
- Bopearachchi, Osmund and Frank L. Holt. 2011. *The Alexander Medallion: Exploring the Origins of a Unique Artefact*. Imago Lattara.
- Bracey, Robert. 2011. The Alexander Medallion: Exploring the Origins of a Unique Artefact. *Numismatic Chronicle* 171, 487-494. <https://www.jstor.org/stable/42667247>.
- de Callataÿ, François. 2013. Pourquoi le *distatère en or au portrait d'Alexandre* est très probablement un faux moderne. *Revue Numismatique* 170, 175-189.
- Chugg, Andrew Michael. 2007. "Is the Gold Porus Medallion a Lifetime Portrait of Alexander the Great?" *The Celator* 21 (9): 28-31 and 34-35.
- Chugg, Andrew Michael. 2009. *Alexander the Great in India. A Reconstruction of Cleitarchus*. AMC Publications.
- Fischer-Bossert, Wolfgang. 2006. "Review of Bopearachchi & Flandrin, Le Portrait d'Alexandre Le Grand." *American Numismatic Society Magazine* 5 (2); 62-65. <http://numismatics.org/magazine/grandsommer06/>.
- Hollstein, Wilhelm. 1989. "Taxiles' Prägung für Alexander den Grossen." *Schweizerische Numismatische Rundschau* 68: 5-17.
- Holt, Frank L. 2003. *Alexander the Great and the Mystery of the Elephant Medallions*. University of California Press.
- Holt, Frank L. 2006. "Ptolemy's Alexandrian Postscript." *Saudi Aramco World*, Nov-Dec Ed: 4:9. <https://archive.aramcoworld.com/issue/2000606/ptolemy.s.alexandrian.postscript.htm>.
- Holt, Frank L., and Norman MacDonald. 2005. "Stealing Zeus's Thunder." *Saudi Aramco World*, May-June Ed: 10-19. <https://archive.aramcoworld.com/issue/200503/stealing.zeus.s.thunder.htm>.
- Hurter, Silvia Mani. 2006. "Review of Bopearachchi & Flandrin, Le Portrait d'Alexandre Le Grand." *Schweizerische Numismatische Rundschau* 85: 185-200.
- Jenkins, G. K. and Harald Küthmann, 1972. *Münzen der Griechen*. München; Freiburg: Ernst Battenberg Verlag.
- Pieper, Wilfried. 2013. "Review of Osmund Bopearachchi, Frank Holt: The Alexander Medallion: Exploring the Origins of a Unique Artefact." *Topoi* 18 (2): 623-630. [https://www.persee.fr/doc/topoi\\_1161-9473\\_2013\\_num\\_18\\_2\\_2513](https://www.persee.fr/doc/topoi_1161-9473_2013_num_18_2_2513).
- Price, Martin J. 1991. "Circulation at Babylon in 323 B. C." In: *Mnemata: Papers in Memory of Nancy M. Waggoner*, William E. (ed.) Metcalf. New York: The American Numismatic Society.
- Steward, Andrew. 1993. *Faces of Power: Alexander's Image and Hellenistic Politics*. University of California.
- Sunday Times*. 2011 (Sri Lanka, no author listed). "Getting Hold of the Alexander Medallion." September 25, 2011. [http://www.sundaytimes.lk/110925/Plus/plus\\_05.html](http://www.sundaytimes.lk/110925/Plus/plus_05.html).

- Taylor, Lloyd W. H. 2018. “The Earliest Alexander III Tetradrachm Coinage of Babylon: Iconographic Development and Chronology.” *ANS Journal* 30, 2018: 1-43.
- Troxell, Hyla A. 1997. “Studies in the Macedonian coinage of Alexander the Great” (Digital ed.), *Numismatic Studies* 21. New York: American Numismatic Society, 1997. <http://numismatics.org/digitallibrary/ark:/53695/nnan174624>.
- Zollfreilager Schweiz. 2019. EZV Admin. <https://www.ezv.admin.ch/ezv/de/home/information-firmen/waren-anmelden/einfur-in-die-schweiz/zollfreilager.html>.

Table I. Diameters of the discussed coin examples

Coin	Diameter (mm)	Source & Weight
Porus Decadrachm	35	Holt E/A2 & E/A1, 39.66g & 42.20g
Archer Type Example 1	22	Holt E/B5, 15.41g
Archer Type Example 2	26	Holt E/B8, Gemini II, 15.83
Chariot Type Example 1	24.4	Holt E/C2, 15.72g
Chariot Type Example 2 (ANC)	26.6	Holt E/C3, ANC, 16.2g
Gold Porus	19	Calculation from photo, 16.75g
Amphipolis Alexander Tetradrachm 324BC	24	Measured by AMC, 17.24g
Ptolemy Elephant Scalp Alexander Type 1	26	Measured by AMC, 17.04g
Ptolemy Elephant Scalp Alexander Type 2	30	Measured by AMC, 15.43g
Star Shield Bronze Type Example 1	12	Measured by AMC, 2.33g
Star Shield Bronze Type Example 2	12	Measured by AMC, 2.10g

## Figures



Fig. 1. The Decadrachm type (Holt's E/A2 left with Holt's E/A1 right) Porus type in the British Museum, BM BM1887-6-9-1 (The Franks Medallion). PHGCOM ([https://commons.wikimedia.org/wiki/File:Alexander\\_the\\_Great\\_India\\_coin.jpg](https://commons.wikimedia.org/wiki/File:Alexander_the_Great_India_coin.jpg)), "Alexander the Great India coin", <https://commons.wikimedia.org/wiki/Template:PD-self> [https://www.britishmuseum.org/research/collection\\_online/collection\\_object\\_details.aspx?objectId=1274498&partId=1&images=true](https://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=1274498&partId=1&images=true).



Fig. 2a. The archer type. With permission of Numismatica Ars Classica NAC AG, Auction 114, Lot 123 (2019), 15.41g (Holt's E/B5).



Fig. 2b. The archer type, Gemini II Auction, Jan 10 2006, 15.83g (Holt's E/B8 which was sold in Gemini II with Holt's E/B11). неизвестен ([https://ru.wikipedia.org/wiki/File:Babylon\\_mint\\_Porus\\_coinage\\_326BC.jpg](https://ru.wikipedia.org/wiki/File:Babylon_mint_Porus_coinage_326BC.jpg)), "Babylon mint Porus coinage 326BC", <https://creativecommons.org/publicdomain/zero/1.0/legalcode>.



Fig. 3a. The chariot type. With permission of Numismatica Ars Classica NAC AG, Auction 114, Lot 124 (2019), 15.72g (Holt's E/C2).



Fig. 3b. The chariot type. ANS (American Numismatic Society) Inv. 1990.1.1. Acquired: Spink and Son Auction 71, Lot 49 (9. Nov. 1989). Weight: 16.2g. Price, Mnemata, 15,27. (Holt's E/C3).  
With permission of the ANS.



Fig. 4. The gold medallion of Alexander the Great. The new discovered 'Gold medallion of Alexander' as depicted in the paper of Andrew Chugg (Chugg 2007). As it is unique and the private owner cannot be traced, picture rights cannot be sought. We use the picture found under fair use (non-commercial and for a scientific purpose).



Fig. 5. A regular tetradrachm of Alexander the Great (Amphipolis mint circa 325-324BC - collection of Andrew Chugg).



Fig. 6. The two main types of Alexander-wearing-an-elephant-scalp tetradrachms minted by Ptolemy as Satrap of Egypt: earlier type above (c. 321-316BC) and later type below (c.315-305BC) from the collection of Andrew Chugg.



Fig. 7. Alexander the Great Star Embossed Shield Type Bronze Coins with the letters B and A either side of the helmet on the reverse (examples from the collection of Andrew Chugg).



## Sterling and Currency

Dealers in Australian Rare Coins & Notes  
Proud to Sponsor the NAA Journal

Our website has a wide range of Australian coins and notes, each with a hi-res image in full colour, coupled with a detailed description regarding the item's history, rarity and value.

Street: Shop 22; 35 William St  
FREMANTLE; WA; 6160  
Postal: PO Box 364; FREMANTLE; WA; 6959  
Phone: 08 6468 2467 Fax: 08 9336 1433  
ABN: 24 120 655 469

<http://www.sterlingcurrency.com.au>

**drake sterling**  
numismatics

All coins **INDEPENDENTLY-AUTHENTICATED**  
and **INDEPENDENTLY-GRADED**

GOLD SOVEREIGNS | AUSTRALIAN COINS | WORLD GOLD COINS

Free call **1800 832 328**  
[www.drakesterling.com.au](http://www.drakesterling.com.au)  
[info@drakesterling.com.au](mailto:info@drakesterling.com.au)

# BUYING OR SELLING?

## OUR RESULTS TELL THE STORY.

If you are looking to acquire an Australian rare coin. Or sell an existing collection, our team is ready to guide you through the process with an on-going commitment to achieve your goals. And sellers please note. Our commission rates are competitive.

For more information on Australia's finest rare coins visit [www.coinworks.com.au](http://www.coinworks.com.au) or call (03) 9642 3133.

**coinworks** EST. 2008  
[coinworks.com.au](http://coinworks.com.au)



**Vintage Coins & Banknotes**  
**VINTAGE COINS & BANKNOTES**

**Vintage Coins & Banknotes**

- Professional, family owned online numismatics business with over 35 years experience
- We provide an honest, friendly and diligent service
- Valuations for private collections and deceased estates
- Specialising in buying and selling Australian and World coins, banknotes and gold
- Full range of accessories
- Secure online store accepting credit cards, Paypal, Afterpay and ZipPay

Free call: 1800 818 621  
 Email: sales@vintagecoinsandbanknotes.com.au  
 Website: vintagecoinsandbanknotes.com.au

VISA MasterCard American Express  
 zipPay afterpay

Numismatic Association of Australia  
 NUMISMATIC AUSTRALIA  
 The Numismatic Society of Australia

**From New Zealand's Leading Auction House**  
**COIN, BANKNOTE & MEDAL AUCTION**  
**Friday 6th March 2020**  
 12.30pm, West Plaza Hotel, Wellington, New Zealand

- ★ World, Americas, British & NZ Coins ★ Medals & Banknotes ★
- ★ George I to George VI Gold ★ NZ Colonial Bank £1 1887 ★
- ★ BNZ Notes ★ NZ 50 Pounds Notes ★ NZ Proof 1964 Threepence ★
- ★ NZ Traffic Service Medals ★

Catalogue online February at  
[www.mowbraycollectables.com](http://www.mowbraycollectables.com)  
 Contact us now to receive a free printed catalogue

**MOWBRAY COLLECTABLES**

Private Bag 63000, Wellington 6140, New Zealand  
 Phone +64 6 364 8270, Fax +64 6 364 8252  
 Email auctions@mowbrays.co.nz

**Consign with us Now**

**DOWNIES**  
 AUSTRALIAN COIN AUCTIONS

**CONSIGNMENTS WANTED**

- ▶ Professional advice on all aspects of your collection, and obligation-free appraisals
- ▶ Worldwide market exposure – every lot published at [www.downies.com](http://www.downies.com)
- ▶ Industry leading clearance rates – exceptional prices realised
- ▶ Comprehensive pre-sale viewing – superbly produced, fully illustrated catalogue
- ▶ Auction house of choice for the Reserve Bank of Australia, the Royal Australian Mint, and Australia's leading numismatists

**2018 AUCTION DATES**

**SALE 327**  
 MAY 22 - 24

**SALE 328**  
 AUGUST 21 - 23

**SALE 329**  
 OCT 30 - NOV 1

**Contact Us** ☎ (03) 8456 8456 🌐 [www.downies.com/aca](http://www.downies.com/aca)  
 ✉ PO Box 3131, Nunawading VIC 3131

# *Journal of the Numismatic Association of Australia Inc (JNAA)*

## **Guidelines for authors**

Submitted articles can be on any worthwhile numismatic topic, keeping the following guidelines in mind:

*Subject Matter:* should offer new information or throw new light on an area of numismatics, although preference is given to Australian and New Zealand authors or subject matter.

*Submitted Articles:* should be as much as possible the result of **original research**. Articles should not have been previously published or presently be under consideration for publication elsewhere.

### **All submitted articles are refereed before being accepted for publication**

Once their work has been published in the *JNAA*, authors are asked not to re-publish that work elsewhere within a two-year period. Any applications for exemption from this requirement should be submitted in writing to the Managing Editor.

### **Submissions:**

*Articles:* should be sent as an MS Word file, .doc, .docx or .rtf format. Submission should be made in the first instance by email attachment.

*Images and Tables:* Submit article images and tables individually to the text document in high resolution JPEGs or TIFFs for images, or a separate MS Word or MS Excel document for tables. DO NOT supply images and tables only within the body of your document.

*Special Fonts:* If special characters or fonts are used within the text, please supply the relevant file with your submission.

*Author Statement:* Authors are asked to supply a brief numismatic biographical statement, which is appended to their published article with full name and email address.

### **Article format details:**

**<http://www.numismatics.org.au/pdfword/JNAAGuidelines.pdf>**

*References:* The *JNAA* uses **footnote referencing**. Text reference numbers are placed after punctuation marks e.g. end.<sup>3</sup> They follow sequentially through the text. If two references are needed at one point, separate them by a semicolon ‘;’ in the footnote.

*Images and Tables:* All images should be referenced in the text. Text references to images should be numbered as (Fig. 1), (Figs. 1 and 2); (Table 1), (Tables 1 and 2); etc. The location of images and tables within the article needs to be indicated by <Insert Figure ‘x’> or similar with figure caption text.

*Lists:* All lists should be presented as tables. These can be submitted within the body of the document or in a separate file.

*Captions:* Figure and table captions should explain images fully and read independently of the main text (in case they are moved). **All images must be referenced and have copyright clearance.**

*Quoting:* use quotation marks for quotes under two lines. Italicise and indent quotes longer than two lines. All quotes need to be referenced in the footnotes.

**Proofs:** Authors will receive a .pdf proof of their article for comment by email. Author comments can be made by placing comment tabs in the .pdf, or listing corrections/comments by page, column, and line number in a separate document. Comments must be returned by email to the Managing Editor no more than 5 days after receiving the proof.

**Enquiries:** Please direct all communications to the Managing Editor, Dr Gil Davis:

post: 1/1 Kiara Close, North Sydney, NSW 2060 Australia

email: [editor@numismatics.org.au](mailto:editor@numismatics.org.au)



# Be Part Of Our Success

With three major international numismatic auctions each year, you can be sure that your collection is in the hands of the very best. All our consignments are carefully catalogued and showcased in specialised catalogues in print and online.

For your free, confidential valuation call (02) 9223 4578 or visit [www.noble.com.au](http://www.noble.com.au)



169 Macquarie St, Sydney  
7/350 Collins St, Melbourne



**NOBLE**  
NUMISMATICS PTY LTD