Graeco-Bactrian and Indo-Greek Coins

A Bibliography of the Numismatics of the Hellenistic Far East

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1. Introduction

This bibliography is intended to complement Rachel Mairs’ *The Archaeology of the Hellenistic Far East: A Survey* (hereafter HFE 2011) and it is hoped that the current work will be of similar use in gathering material concerning the coins of the Hellenistic Far East together in a single place. The very accessible format of *The Archaeology of the Hellenistic Far East* has been retained and adapted slightly to the numismatic material. Supplements to this bibliography will be produced and made available regularly in a similar way to HFE 2011 through academia.edu and bactria.org. Readers are asked to submit corrigenda or details of new publications to simon.glenn@me.com.

1.1 Scope

The ‘Hellenistic Far East’ has come to be something of a standard term when discussing the area consisting of what is now Afghanistan, Pakistan, and the former Soviet Central Asian Republics. The geographical scope of the current work is slightly larger as some works dealing with punch-marked and so-called Mauryan coins, produced in Ancient India, are included here given their obvious status as predecessors to Indo-Greek issues. Likewise, some items concerning the issues of the Kushans are given below since they deal with the end of the Indo-Greek kingdoms.

Chronologically the scope is somewhat wider than that usually given to the Hellenistic period. Some scholarship dealing with the so-called ‘Alexander medallion’, which may have been produced during the lifetime of Alexander the Great is to be found below, while the continuation of Indo-Greek rule into the first century AD gives a date later than the 31 BC often cited with regard to material from the west for the end of the Hellenistic period. Since coins are one of the best primary sources of evidence for the period they are often discussed in more general scholarship, here, however, only publications with a predominantly numismatic focus have been included. Likewise, general works on Greek coinage have been omitted but can be found in Daehn (2012), itself a useful source in compiling the following bibliography.

2. General works and introductions

As with the archaeology of the Hellenistic Far East in general, the study of Graeco-Bactrian and Indo-Greek (hereafter G-B and I-G) numismatics has become more popular in recent years. General works on Hellenistic coinage, such as Davis and Kraay (1973) which includes some of the best photographs of these beautiful coins, often deal only briefly with G-B and I-G issues. Indeed, Mørkholm (1991), currently the best known general work on Hellenistic coinage, makes reference to the Hellenistic Far East only very briefly because of the unfortunate early death of its author. Other, older discussions of Hellenistic coinage, Newell (1937), for example, concern themselves with the remarkable portraiture of the G-B precious metal coins in particular. Despite the recent dramatic increases in the numbers of G-B and I-G coins appearing on the coin market, and renewed attempts at serious numismatic study, it is not unusual to find these coins omitted from major works, the 2012 *Oxford Handbook of Greek and Roman Coinage* being a notable example. Thonemann (2015), a very recent introduction to Hellenistic coinage, is unusual in devoting a considerable section to G-B and I-G coins and their use as sources for history.

The work of Frank Holt, in particular Holt (1999) and (2012), often includes accessible discussions of the history of the study of these coins, as well as the potential pitfalls in previous approaches. Widemann (2009) provides a very thorough synthesis of much of the scholarship of the period, with a very definite focus on the numismatic evidence. The fact remains, however, that there is no good, general introduction to the subject in English, an omission highlighted in Bracey (2011b). A very useful starting point, however, is Cribb (2007), which gives an overview of the coins produced in the region from the
It is appropriate here to point out that much scholarship on the numismatics of the Hellenistic Far East is not so soundly-based. Analysis of portraiture, in particular, has led to historical conclusions that are total fantasy. Unfortunately, this approach has often spread to other numismatic methodologies out of a desire to make the most of all available evidence. Graeco-Bactrian and Indo-Greek coins, in the absence of other forms of evidence often simply have to bear too much of the weight in full attempts at historical reconstruction. The reader will do well to bear in mind that a plausible or possible explanation or reconstruction, is far from a certain one, and often by no means the only one. Some of the approaches taken below are undoubtedly unsuccessful (Bracey (2007), for example, is now publicly disowned by its author). The following bibliography should therefore be used with caution.

2.1 Histories

HFE 2011 (4.2) discusses in some detail the various synthetic historical studies and there is no need to repeat that topic here. It is, however, worthwhile to highlight Guillaume (1990), which is excellent in its detailed unpicking of the questionable analytical arguments applied by Tarn (1951) and Narain (1957) to the numismatic evidence.
3 Catalogues & Collections

An important part of any numismatic study is a thorough review of the evidence given by the coins themselves, and the lack of a comprehensive catalogue long hampered the field of G-B and I-G numismatics. The standard work currently is Bopearachchi (1991a), which is based on the extensive collection of the Bibliothèque nationale de France, while also incorporating other major collections. It is now, unfortunately, somewhat out of date following the large increase in the appearance of new coins from the mid 1990s onwards. Hoover (2013) provides an overview of G-B and I-G issues that is mainly aimed at collectors, while each ruler is introduced with a short section on general history, as well as the coinage issued under them. Hoover is notable in often not labelling the bronze denominations with a particular name, preferring, correctly, to refer to them instead with a letter for each denomination, thus avoiding any judgement about the relative values of the coins.

The work of Mitchiner (1975/1976) is well-illustrated, but now very dated, and can be misleading in the over-confident analysis it offers of the historical situation in which the coins were struck. In particular, Mitchiner’s use of monograms allows him to assign coins to certain mints, attributions which are far from secure. The work also contains a number of misleading errors in its identification of certain coins and their provenances.

Older catalogues should not be overlooked and are often the only way of accessing images and information about certain coins. The Lahiri (1965) corpus is perhaps most interesting in its methodological approach, placing the kings in alphabetical order as a way of dealing with the uncertainty of the historical reconstruction of the king list.

The coins of a number of large collections have been published as catalogues, with perhaps the best, both in terms of number of coins, and their presentation, being the *Sylloge Nummorum Graecorum* of the American Numismatic Society: Bopearachchi (1998). The collection of the British Museum is published in Gardner (1886) for G-B and I-G coins and Allan (1936) for ancient Indian issues. Unfortunately, neither are particularly well-illustrated. Catalogues of the Indian Museum in Kolkata (Smith (1906)) and the Lahore Museum (Whitehead (1914)) are equally dated and lacking in clear illustrations of the coins in the two cabinets. Bopearachchi (1993), a catalogue of the collection of the Smithsonian Institution, includes a similar historical introduction to that found in Bopearachchi (1991a), while the collection itself includes many more I-G than G-B coins.

A few important private collections have also been published. In particular, Bopearachchi and Rahman (1995) includes a number of new types and monograms omitted from Bopearachchi (1991a). Many of the coins of the Rahman collection are said to have come from the second Mir Zakah hoard, as well as some examples from the so-called Aï Khanum IV hoard. The publication, however, should be questioned.

The above summary, and the following bibliography is not intended to be an exhaustive collection of all catalogues containing GB and IG coins, including only those with significant numbers of coins. Seleucid coins from Bactria are well covered in the catalogue of Houghton and Lorber (2002), which includes a discussion of the output of each proposed mint under the Seleucid kings, while the standard work on punch-marked coins (Gupta and Hardaker (2013)) has recently been revised.
3.1 Commercial Numismatic Publications

The best source of images of G-B and I-G coins in recent years has been commercial numismatic publications. Large coin auction houses, such as Classical Numismatic Group, Gorny and Mosch Giessener Münzhandlung, Fritz Rudolf Künker, and Roma Numismatics regularly sell G-B and I-G coins, in the process producing catalogues with high quality photographs. Electronic copies are often available on the individual company websites and through Coin Archives (see 3.2). Older commercial numismatic material is also a valuable source of coins that are not currently available for study. Before the 1990s, dealers often operated on an irregular basis (R. C. Senior/Senior Consultants being a good example), and their catalogues, which contain rare and unusual coins, can be difficult to find. The catalogue of the excellent collection of commercial numismatic material at the Fitzwilliam Museum, Cambridge (available at http://www.fitzmuseum.cam.ac.uk/dept/coins/library/salecatalogue/) is a helpful resource in identifying these smaller dealers.

Coins with questionable authenticity are regularly offered for sale, sometimes (but not always) labelled as imitations, either contemporary or modern. The issue of forgery, a larger problem than often recognised, should always be kept in mind when dealing with coins from commercial numismatic publications.

3.2 Online resources

Although the major collections of G-B and I-G coins are published in physical form, many institutions now maintain online catalogues with high quality images of their coins. The American Numismatic Society (http://numismatics.org/search/) was one of the first large collections to be made available online. Images of the collection of the Bibliothèque nationale de France are also available (http://gallica.bnf.fr/html/und/objets/monnaies-grecques), although the coins have not been fully catalogued and can be difficult to find with limited meta data to allow a satisfactory search. The, now rather dated, website of the Sylloge Nummorum Graecorum (http://www.sylloge-nummorum-graecorum.org/) provides a searchable database of coins published as part of that project.

As mentioned above many G-B and I-G coins can be found through commercial numismatic publications. The most thorough online collection of these is the Coin Archives website (http://www.coinarchives.com/), although now only fully accessible through a subscription service. A free to view alternative is acsearch (https://www.acsearch.info/). A number of private enterprises are also very useful. The Zeno Oriental Coins database (http://zeno.ru) not only includes coins that have been offered for sale by major auction houses, but also provides a framework for private collectors to upload and catalogue their own coins. Finally, a very good introduction and overview of the coinage of the G-B and I-G kingdoms can be found at Coin India (http://coinindia.com/index-greek.html) with sober historical introductions given for each king followed by an illustrated guide to the denominations produced for them.
4 Hoards and circulation

The find spot of a coin can be of great interest from an historical perspective. Of even more use are the discoveries of hoards, which can provide a snapshot of the coins in circulation in a particular area, with obvious implications for relative chronology of the rulers whose coins appear. An important pre G-B hoard is published in Nicolet-Pierre and Amandry (1994) and gives an indication of the coins that were used in the region before the Seleucids.

Curiel and Schlumberger (1953) discusses the Kabul hoard of 1933 and its evidence for the circulation of Greek silver coins in the Achaemenid Empire, as well as the first hoard discovered at Mir Zakah. This important hoard contained ‘bent bar’ and punchmarked coins as well as Greek, G-B, I-G, Indo-Scythian, Indo-Parthian, and Kushan issues, prefiguring the enormous second hoard from Mir Zakah discussed further below. Notice of the Qunduz hoard, consisting of large numbers of later G-B coins and contemporary imitations, was originally given by Bivar (1953) and (1955) and it was finally published in Curiel and Fussman (1965). Hoards containing G-B and I-G coins can also be found in the Inventory of Greek Coin Hoards (1973), now available in an online form (http://coinhoards.org) and the volumes of Coin Hoards.

The most famous archaeological site from the period, Aï Khanum, has produced a number of hoards as well as general coin finds. The first hoard, consisting of a large number of punch-marked coins and six bilingual issues of Agathocles, is published in two parts in Audouin and Bernard (1973) and (1974). The second hoard from the site, mainly made up of G-B issues can be found in Petitot-Biehler (1975), with a discussion of the historical significance in Bernard (1975), while the third hoard, reconstructed from trade, is published in Holt (1981). The individual coin finds from Aï Khanum can be found in Bernard (1985), which, amongst other matters, also discusses the (limited) evidence of a mint in the city. The numismatic finds from other sites (Begram, Dil’berdzhin, Merv, and Taxila) are also to be found in the bibliography.

The work of Osmund Bopearachchi has been integral to the recording of many of the hoards that have come out of the region since the mid-1990s. In particular the second Mir Zakah hoard, discovered in 1992 and one of the largest hoards of coins ever found, apparently consisting of over four tonnes of coined metal (about 550,000 silver and bronze coins) is discussed in many of Bopearachchi’s publications. References to this and other hoards found in this period can be found in Bopearachchi (1994a), (1999a), and (2005a) amongst others. A thorough summary of the Kuliab hoard is available in Bopearachchi (1999c) as well as brief summaries and discussions of historical significance of many of the other hoards from the period.
5 Metallurgical analysis

As often in the study of ancient coins the potential of a thorough analysis of the metallic content of G-B and I-G issues promises much of interest to the historian of the period. Unfortunately the results of very few analyses have been published and the problems of accuracy, cost, and the potentially destructive nature of certain methods of analysis are significant barriers to further research. Particle induced x-ray emission (PIXE) analysis of 31 ‘Hellenistic’ silver coins was undertaken by Buckley, with the results published in Buckley (1985), although full details of the coins analysed are only available in the unpublished thesis, Buckley (1982). The nine G-B and I-G coins analysed were all smaller denominations (drachms, hemidrachm, and obols) and it is difficult to draw conclusions from such a small sample.

Much of the analysis undertaken on G-B coins has focused on the composition of the cupro-nickel issues of Euthydemus II, Pantaleon, and Agathocles, coins that were of particular interest because of the lack of nickel in all other ancient (Western) coins. The first, destructive wet chemical analysis, was published in Flight (1868) and its conclusions of a nickel content c. 20 per cent (with copper of c. 78 per cent) has been confirmed in most other tests, beginning with Moss (1950). A major digression in the discussion of these coins was caused by the suggestion of Cheng and Schwitter (1957), apparently supported by x-ray fluorescence (XRF) analysis, that the cupro-nickel alloy was Chinese pai tung, a theory that would have led to a significant reinterpretation of the history of the region given the apparent evidence of trade links between Bactria and China. The suggestion that the alloy was a Chinese innovation met fierce criticism from Cammann (1956), (1958), and (1962), and should now be discarded.

A thorough analysis of the cupro-nickel (and some copper G-B) coins in the British Museum was published in Cowell (1989). Both atomic absorption spectroscopy (AAS) and a scanning electron microscope were used to investigate the composition of 28 coins.

Cowell considered the trace elements of iron and arsenic in the coins, the quantity of which seemed to correlate with the monogram on the coins, an interesting conclusion that has important consequences for the interpretation of these symbols. Cowell concluded that the nickel content of the coins was consistent, that the unusual alloy was the result of the use of a nickeliferous copper ore, and that the composition of the G-B coins was not similar to analyses of pai tung objects.

Barrandon and Nicolet-Pierre (1989) presents the results of neutron activation analysis of 13 cupro-nickel coins, with compositions roughly consistent with those of Cowell, although with more variation in the quantity of nickel. In addition, the results of analysis of three elephant/thunderbolt square coins of Antimachus I showed a 20 per cent tin content, while two square coins each of Pantaleon and Agathocles and one of Apollodotus II were tested and found to be 99 per cent copper, with one exception which contained 13 per cent lead.

6 Overstrikes

The lack of evidence for the G-B and I-G kings, and in particular, the order in which they ruled lends particular importance to the study of overstruck coins. In some cases, instead of producing fresh blanks, coins were struck directly on top of the issues of another king, with obvious implications for the historical situation. Many I-G overstrikes are collected in Bopearachchi (1989a) and (2008), while particular instances are to be found in Widemann (1972), MacDonald (1996) and (2000), and Senior and Mirza (1996).
7 Monograms

The importance of the monograms that often appear on the reversed many G-B and I-G coins was realised long ago and many suggestions (collected in Guillaume (1990)) have been made concerning their meaning and purpose. Cunningham (1884) contains one of the first systematic attempts to ‘decipher’ the monograms by attempting to expand their constituent Greek letters and then attaching a known place name on the basis of these two or three letters. Such an approach is clearly problematic. Simonetta (1957) and (1958) are the first attempts to address the issue by looking at monogram succession i.e. tracing the use of the same monograms under different kings, a potentially fruitful approach that has been followed in recent years in Wilson (2006c) and (2006e) with regard to specific kings. A more recent attempt to study a possible progression of the monograms itself can be found in Dani (1992). Although a very useful feature in sorting coins into roughly contemporary groups, the question of the purpose of the monograms has yet to be satisfactorily answered.

8 Die studies

In the Hellenistic world coins were usually produced by striking a blank piece of weighed metal between two dies, engraved with the design required for the coin. Since the dies were engraved by hand no two are the same and it is possible to identify which coins were struck with particular dies. One die (the obverse) was set into an anvil during striking and was thus protected from the full force of the hammer blow, meaning that it did not need to be replaced as regularly as the other die (the reverse). Once different dies have been identified it is therefore possible to draw up a relative order of production. The size of the original output of coins can also be estimated. This sort of die study can provide a relatively full understanding of the production process of the coins and therefore a sound basis for any historical reconstruction. The first full published GB die study can be found in Kovalenko (1996), dealing with the issues of Diodotus I and II. The technique has also been used on a smaller scale with coins coming from a particular hoard in Zeng (2013), providing further support for the reinterpretation of the Diodotids in Jakobsson (2010). In the past couple of years a number of die studies have been undertaken on pre-Selucid and G-B coins (Bordeaux (2015), Glenn (2015), and Jansari (2016)) and the potential for further work of this kind is enormous.

9 Contemporary imitations

The issue of contemporary imitations of G-B coins has been discussed by a number of scholars, although much work remains to be done. The beginning of the phenomenon of copying the coin types of well-known Greek coins was the production of imitation Athenian ‘owl’ coins already discussed above with reference to the 1990 hoard, but treated more generally in Smith (2001a). Many of the imitations of G-B coins seem to have come from Sogdia and are discussed in Naymark (2008), and the particular imitations of the coins of Euthydemus I in Bopearachchi (1992a). Imitations of Eucratides I were studied by Kirkpatrick (1973c) and Smith (2000), while those of Helioctes I are considered in Kala (1947) and Smith (2001b). I-G imitations have received much less attention, although some examples from Swat are discussed in Ziad (2004) and imitations of Menander feature in Nasim Khan, Errington, and Cribb (2008).
10 Forgeries

Cunningham (1840a) and (1840d) long ago highlighted the problem of forgery of G-B and I-G coins. The important contributions of Shortt (1963) and Jenkins (1965) include further warnings about the authenticity of the coins. In particular Shortt was aware of the context of the production of his group of (mainly I-G) forgeries, apparently coming in the 1940s from the village of Utmanzai, now in Pakistan. A list of 32 known types is provided, along with the results of XRF analysis of some of the coins, showing a surprising consistently high content of silver. More recently Bracey (2008) describes a significant group of G-B forgeries from Euthydemus I to Heliocles, of which the author was aware of 164 examples. It is certain that many of these examples have made their way into trade and been offered for sale in recent years, although the style of many of the issues is quite different from genuine issues. Other notices of forgeries are often much shorter and without context, see for example Handa (1996), Hirano (1999), and Gawlik (2016), making identification of other examples of the same group of forgeries quite challenging.

The most notable example of a debate around the authenticity of a coin from the region in recent years has been that concerning the so-called Alexander medallion and a gold coin of Sophytes originally published in Boppearachchi and Flandrin (2005). Said to have come from the second Mir Zakah hoard, the appearance of these unique coins immediately raised suspicions about their authenticity in reviews of the original publication (see, for example the highly critical Hurter (2006) in which even the integrity of the Mir Zakah hoard is questioned). Holt and Boppearachchi (2011) was produced in response to these criticisms and reviewed in Bracey (2011a). The most recent condemnation of the coins appeared in Callataj (2013), which includes summaries of the criticisms raised elsewhere.
Bibliography


Amini, A. (2016), Pre-Islamic Iranian Coins in the Astan Quds Razavi Museum ایران های سکه قدس آستان مرکزی موره در اسلام از بخش روضه Mashhad.


Bayer, T. S. (1738), Historia regni Graecorum Bactriani, in qua simul Graecorum in India, St Petersburg.


Bopearachchi, O. (2003), *An Indo-Greek and Indo-Scythian Coin Hoard from Bara (Pakistan)*, Seattle.


Cunningham, A. (1840c), ‘Descriptions of, and deductions from a consideration of, some new Bactrian coins’, Journal of the Asiatic Society of Bengal 9, 867-889, 1008.


Cunningham, A. (1846), ‘An attempt to explain some of the monograms found upon the Grecian coins of Ariana and India’, NC 8, 175-197.

Cunningham, A. (1866), ‘Coin of the Indian prince Sophytes, a contemporary of Alexander the Great’, NC, new series, 6, 220-231.

Cunningham, A. (1884), Coins of Alexander’s Successors in the East, London. [Collection of articles published in Numismatic Chronicle from 1868 onwards]


Guillaume, O. (1990), Analysis of Reasonings in Archaeology: The Case of Graeco-Bactrian and Indo-Greek Numismatics (tr. O. Bopearachchi), Delhi: Oxford University Press.

Guillaume, O. (ed.) (1991), Graeco-Bactrian and Indian Coins from Afghanistan (tr. O. Bopearachchi), Delhi: Oxford University Press.


Haughton, H. L. (1942), ‘Some rare Indo-Greek hemidrachms from the North Western Frontier’, Journal of the Numismatic Society of India 4, 146-147.


Haughton, H. L. (1946), ‘Notes on Greek and Kushan coins from North-West India’, NC6 6, 141-145.

Haughton, H. L. (1948), ‘Some coins of Eukratides and Apollodotos from Afghanistan, c. 1840’, NC8 8, 103.

Haughton, H. L. (1948), ‘The silver coinage of Strato and of Strato and Agathocleia’, NC8 8, 134-141.

Head, B. V. (1906), ‘The earliest Graeco-Bactrian and Graeco-Indian coins’, NC4 6, 1-16.


Lahiri, A. N. (1957), ‘The Diodotus Coins’, Indian Historical Quarterly 33/3, 222-228.


Masson, C. (1836b), ‘Third memoir on the ancient coins discovered at the site called Beghrám, in the Kohistán of Kabul’, *Journal of the Asiatic Society of Bengal* 3, 153-175.


Mukherjee, B. N. (1970), ‘Some observations of the metrology of the Indo-Greek and Scytho-Parthian coins’, *Journal of the Numismatic Society of India* 32/2, 144-149.


Narain, A. K. (1957b), ‘Apollodotus and his coins’, *Journal of the Numismatic Society of India* 19/2, 121-134.


Prinsep, J. (1836a), ‘New varieties of Bactrian coins, engraved as plate XXXV from Mr Masson’s drawings and other sources’, Journal of the Asiatic Society of Bengal 5, 548-554.


Prinsep, J. (1844), Historical Results from Bactrian Coins and Other Discoveries in Afghanistan, H. Prinsep (ed.), London.


Rapson, E. J. (undated, 1897?), Sources of Indian History: Coins.

Rawlinson, H. G. (1909), Bactria: from the earliest times to the extinction of Bactrio-Greek rule in the Punjab (being the Hare University prize essay, 1908), Bombay.

Rogers, C. J. (1896), Graeco-Bactrian and Indo-Scythian, Parthian, Sassanian and Miscellaneous Coins, Calcutta.

Rogers, C. J. (1896), ‘Two new coins from the Panjáb’, NC3 16, 268-270.


Rtveladze, E. V. (1987), Drevnie monety Srednej Azii, Tashkent.


Tanabe, K. (1993), Silk Road Coins: The Hirayama Collection, Kamakura: Institute of Silk Road Studies.


Tod, J. (1827), ‘An account of Greek, Parthian, and Hindu medals found in India’, Transactions of the Royal Asiatic Society of Great Britain and Ireland, 1, 313-342.


Zabelina, N. N. (1949), ‘Novaya moneta s legendoi ΒΑΣΙΛΕΩΣ ΕΥΘΥΔΗΜΟΥ [New coin with the legend ΒΑΣΙΛΕΩΣ ΕΥΘΥΔΗΜΟΥ]’, Kratkie soobshcheniya o dokladakh i polevykh issledovaniyah Instituta istorii material'noi kul'tury AN SSSR 28, 101-102.


Zeimal, E. V. (1983), Drevnie monety Tadzhikistana [Ancient Coins Tajikistan], Dushanbe.

