3. The PELLA Project: coin types of the Argead kings (Peter van Alfen)

PELLA (http://numismatics.org/pella/) is a new research tool designed to aid in the identification, cataloguing, and research of the individual coin types of the Argead kings of Macedonia from Alexander I (ruled 498–454 BC), the first of the kings to strike coins, down to Philip III Arrhidaeus (ruled 323–317 BC), the last of the titular kings to do so. Included as well as are the numerous posthumous civic and successor coinages struck in the names of the kings. It has been built by ANS web-developer Ethan Gruber, on the same Numishare platform that powers CRRO, CHRR and OCRE, with inbuilt use of nomisma.org IDs.

The current version of PELLA provides links to over 11,000 examples of the coinage (in the name) of Alexander the Great and Philip III Arrhidaeus present in the ANS collection, the Münzkabinett der Staatlichen Museen zu Berlin, the British Museum, and the Fralin Museum of Art. The PELLA project currently focuses on the coinage (in the name of) Alexander III and Philip III, using reference numbers from Martin Price's *The Coinage in the Name of Alexander the Great and Philip Arrhidaeus* , London 1991, as the means of organizing the coinages from various institutions, and will be completed in early 2016. The next stage will focus on the coinage (in the name of) Philip II, using Le Rider, *Le monnayage d'argent et d'or de Philippe II frappé en Macédoine de 359 à 294* , 1977, as the means of organizing the coinages from various institutions, with an estimated completion date of 2016. Also in 2016, following the completion of Stage 2, Pella will then focus on the coinages of Alexander I to Perdiccas III using SNG ANS as the means of organizing the coinages from various institutions. Beyond 2016, Pella will bring in coin types not in Price (1991), Le Rider (1977), and SNG ANS, will consider new and revised attributions, and will begin to assign Pella-specific identification numbers for each individual type.

4. PHANES: A database of early archaic electrum coinage (Ute Wartenberg)

Early electrum coinage is characterized by a multitude of types, weight standards, mints and other features. It is one of the remaining unexplored research areas when it comes to die-studies or even just basic cataloguing. The absence of basic numismatic research in this area is probably largely based on the fact that many of the coin types are only known in a few specimens, which are often spread over many, often unpublished museum collections or in the thousands of auction catalogues. With the advent of digital images and online databases, it has become easier to capture this material and search types. In 2012, Ute Wartenberg began work on a database that could capture the many different types of early electrum. While recording basic data such as weight, photos and size was straightforward, the most difficult challenge was to create a new, custom-made thesaurus for the multitude of types of both obverses and reverses. Here a system was devised that allows the categorization of each obverse type into a hierarchical system of four classifications. All find information for a single coin, from excavations, hoards and other sources, is carefully recorded. Where possible, nomisma.org terminology for numismatic terms is used in order to make the database compatible with other projects. The task of finding all known electrum coins and classifying them is being undertaken by the small team of Wolfgang Fischer-Bossert based at the Österreichische Akademie der Wissenschaften and Ute Wartenberg and Disnarda Pinilla at the ANS. It is estimated that a total of c. 8000 coins are in existence today, which cover easily 400 different types. In 2016, 3,200 coins were entered with digital images and extensive cataloguing. Once all data is entered, an open-access web-based database is planned based on Open Source Numishare technology, which will make the material available to anyone interested in early electrum coinage. The database will also enable archaeologists to identify finds at sites, while museum curators or collectors will be able to research provenances of existing specimens. With the help of a full set of data, one can begin to research with more accuracy the beginning of coinage and understand its impact on the archaic economy. Moreover, the used of Linked Open Data identifiers provided by the nomisma.org project will ensure that the project is fully compatible with other projects within the Online Greek Coinage family.

5. Kyprios Character Website: http://kyprioscharacter.eie.gr (Evangeline Markou)

The round table dedicated to the Landscape of Numismatics allowed not only for a presentation of the design and concept of *Kyprios Character* bilingual (Greek and English) website and coin database that features silver Cypriote royal coinages of the Archaic, Classical and early Hellenistic periods, but also for an analysis of the technical aspects and issues related to the administration of the website itself.

The digital approach to this research project was facilitated by the use of material from digital depositories of museums and coin auctions; there was free access to some of the material, while clean URLs were used for linked data. The profit was double: first, the researcher saved time during the cataloguing process at the museum, since the main information related to each coin was extracted directly from the museum's database; second, the only required action to be taken was verification of technical details (weight, die axis and diameter), attribution and dating, and finally completion of fields that were most often left incomplete, such as type descriptions, coin legends, symbols, etc. The digital approach certainly facilitates the collection and organisation of the numismatic material and thus will enable the easy compilation of a corpus by dies, for future publication.

The free, open source Django Python Web framework that encourages rapid development and clean design was adopted for the creation of *Kyprios Character's*

website. Django comes with an administration panel enabling easy manipulation of database objects, such as coins and related data. For the coin database, Filemaker was used to build a desktop client application for easy insertion, update and deletion of coin objects offline. Export of coin data is achieved via CSV files and custom procedures for sanity checks and data transformation, while bulk insertions on the website are performed via secure copy (SCP or FTP).

The website's concept since the very beginning was aligned to the *Nomisma* ontologies, used to provide stable digital representations of numismatic concepts. We have created a procedure that associates such concepts with our coin data and relates them to specific *Nomisma* entities. This is achieved via exact text comparison, while any entity that does not appear on the *Nomisma* database is addressed to the administrators for update.

Hundreds of Cypriote coins will be added on the online coin database, as soon as the final controls are completed. Furthermore, the database will be constantly updated with new material. The number of the coins to appear online will depend on the authorisations for online publication - especially from museums that do not possess an open access online database or have only part of their Cypriote material online. So far, museums and auction houses have proved to be very receptive to projects that promote and facilitate numismatic research.

The website is hosted on the *Kyprios Character* server, is constantly enriched and updated with the help of volunteers and students and is promoted through lectures, presentations, student courses and social media. The funding for the research project that supported - amongst others - the development of the *Kyprios Character* website, came to an end in October 2015. And while the project's sustainability is guaranteed, since Ancient Cyprus is a field of research at the Institute of Historical Research / National Hellenic Research Foundation, it will be even more facilitated by additional funding.

6. Monnaies de fouille en ligne (Catherine Grandjean)

Published coins from excavations are a small proportion of the Greek bulk, compared with the public and private collections as well as even to the hoards. But we all know places where significant amounts of coins from excavations have remained uncleaned and not listed, sometimes for decades. And predictably that number will increase in the future, with new excavations and surveys. Coins from excavations rarely provide archaeological contexts and most that are known are so late that they cannot offer information on the chronology of the series in question. In spite of that, the landscape is not so dark. Much information can be drawn from an analysis of these coins, including incidences of overstriking, manufacturing techniques, as well as secondary interventions, as countermarking, punching and halving, and wear in circulation. These coins as well as the hoards are at the centre of the study of the uses of coinage. The study of small change, used in day-to-day transactions, has been significant in economic and anthropological studies for years and is now a fruitful field in numismatic studies through coins from excavations. Moreover, it seems that, for about a decade, thanks to the databases and the methodological studies on Roman coins from surveys and excavations, research on Greek coins from excavations has found a second wind. P. Iossif has analyzed Seleucid coins from excavations through his SED (Seleucid Excavation database) and T. Faucher studies Ptolemaic bronze coinage through a database from Egyptian sites. Such comparative approaches are fruitful. The American School of Classical Studies Corinth has already developed Corinth Excavations Digital Resources. It includes data such as mint, description, chronology, archaeological contexts, technical features, as well as photographs of coins. A larger regional approach is possible, including the coins from the Sanctuary of Zeus at Nemea published by R. C. Knapp and J. D. Mac Isaac in 2005 and the Greek coins excavated at Argos that C. Grandjean is about to publish. Such a regional approach is not possible everywhere. One reason is the lack of digital editions of excavation coins. If the process of digitisation includes harmonization of databases, we shall open the field to new studies on a large scale: density of coins, analysis by type of site, percentage of local and foreign coins, local technical features and uses of coins, etc. And if there is a connection with both Online IGCH and OGC, we will obtain a wonderful tool. In Greece, the archaeological sites excavated by the École française d'Athènes (EfA) are a mine of information in our field. For this reason F. Duyrat and C. Grandjean have planned, with the kind help of O. Picard, the project *Monnaies de fouille en ligne* in order to publish online, on the website of the EfA, using the Numishare platform, a database of more than 15,000 Greek coins excavated by the EfA at Argos and at Thasos.

7. Digital Publication, Recent Developments at the American Numismatic Society (Andrew Reinhard)

The ANS continues to prosecute its campaign of Open Access (OA) information, which includes its publications. We create digital editions of the *ANS Magazine*, *American Journal of Numismatics*, and monographs, making them available upon publication of print, or as close to the print publication date as possible. We encourage authors to share their work online immediately upon publication, and without any subvention or embargo period, understanding the necessity to share current scholarship. For those researchers who have not been published (or who have elected not to publish), the ANS created its online Digital Library (http://numismatics.org/digitallibrary/) to share these works with others who would benefit from the research and bibliography.

Hundreds of OCR-scanned ANS publications are hosted as Open Access by HathiTrust (http://babel.hathitrust.org/cgi/mb?a=listis&c=1850525919). Several additional scanning projects are underway, which include rare auction catalogues as well as out-of-print ANS monographs, all of which will be made available as Open Access as the scans beco-