Every student of pre-modern Islamic political, social, economic, or cultural history is aware in a general way of the importance of numismatic evidence, but it has to be admitted that for the most part this awareness is evidenced more in lip service than in practice. Too many historians consider numismatics an arcane and complex study best left to specialists. All too often, historians, if they take coin evidence into account at all, suspend their normal critical judgement to accept without question the readings and interpretations of the numismatist. Or the other hand, numismatists, in the past especially but to a large extent still today, are often amateurs, self-taught through practice with little or no formal historical and linguistic training. This is true even of museum professionals in charge of Islamic collections, no matter what their previous training: The need to deal with the coinage of fourteen centuries, from Morocco to the Philippines, means that the curator spends most of his time working in areas in which he is, by scholarly standards, a layman. The best qualified student of any coin series is the specialist with an expert knowledge of the historical context from which the coinage comes. Ideally, any serious research on a particular region and era should rest upon as intensive a study of the numismatic evidence as of the literary sources. In practice, of course, it is not so easy, but it is easier than many scholars believe, and certainly much easier than for a numismatist to become a fully qualified historian in every field of Islamic civilization.

The current survey is intended specifically as a guide for the historian, as an introduction to the literature and some of the problems of Islamic numismatics. It is divided into four sections: general surveys and reference works; research and study facilities; general problems in Islamic numismatics; and a survey of specialized research, arranged chronologically and geographically. The latter two sections will appear in the next issue of the Bulletin. Published works cited below by author's name and date can be identified by reference to the bibliography at the end, arranged alphabetically by author and then by date. Catalogues of museum collections are cited by country in section two. A survey such as this necessarily draws upon information supplied in conversation or correspondence by many friends and colleagues over the years; I hope they will forgive me if space does not always permit me to acknowledge their help individually, but I am grateful to them all.

Just a few months ago one had to say that there was no general handbook covering all or even a large part of Islamic coinage. This has been changed by the very recent publication of two such works, both intended for collectors and dealers, but likely to be
useful to scholars as well. Stephen Album's *Marsden's Numismatica Orientalia Illustrata* (1977) is conceived as a revision of the original publication of 1823 and 1869. The text is completely new, treating each dynasty and coin series briefly but with Album's characteristic expertise. The work is illustrated with line drawings from the original plates or newly drawn by Irene Fraley Preston. Unfortunately these lists are useful to scholars as well, because they contain only vaguely indicated. The book is out of date, but still occasionally helpful.

An indispensable tool for numismatic research is Zambaur's *Die Münzprägungen des Islams* (1968). The work is essentially a print-edited version of the card file of Zambaur's *Die Münzprägungen des Islams*. The book is out of date, but still occasionally helpful. The author's ideas on the evolution of the coinages are reflected in his organization of the material. As in Album's book, estimates of current prices are given. Both books should be useful as guides to the identification of coins as well as in providing compact overviews of the development of Islamic coinage: both should be in any large research library. A more scholarly narrative treatment of Islamic coinage is projected by the present author for the Methuen/University of California "Library of Numismatics" series, but it will not appear for several years at least.

Other general references include a little book by Plant (1973) intended to enable collectors to read Islamic coins without studying Arabic. For the scholar, it may be useful for its illustrations of the diversity of Arabic epigraphy on coins of the entire Muslim world. It is also cheap and portable. Philip Grierson's *Numismatics* is valuable not only for its very brief but good survey of Islamic coinage, but also as the best general introduction to all aspects of numismatic methodology by a master of the discipline. The articles "Dir al-Darb" (Ehrenkreutz), "Dinar," "Dirham" (Miles), and "Fals" (Udovitch) in the second edition of the *Encyclopedia of Islam* are brief but useful: an article "Sikka" is projected. Adolf Grohmann surveys Islamic numismatics in his *Einführung* (1954), with special relevance for Egypt. A chapter by George C. Miles, "Numismatics," in the *Cambridge History of Iran* (1975), covers a large part of the Islamic world in the first four centuries. Museum catalogues (which are listed in the next section) often are preceded by surveys of the coinage they describe: Lane-Poole's introductions to the British Museum catalogues are still useful. In Arabic there are surveys of the origin and development of Islamic coinage by Fahm (1965) and al-Husaini (1969). Finally, a rather different sort of guide is Codington's *Manual of Musalman Numismatics* (1904), which consists of calendrical tables, tables of Arabic letters and numerals, and lists of personal names and titles, religious legends, and the like, which appear on coins. Unfortunately these lists are not as useful as they might be because their occurrence on coins is often not completely realized, because most of the drawings are attempts at precise rendering of a specific coin. A particularly valuable feature of Zambaur's work is the annotated bibliography, listing the important references for the coinage of each dynasty. There is also a brief introduction to general problems of Islamic coin deciphering.

The second new general handbook is *M. B. Mitchener's Oriental Coins and Their Values: The World of Islam* (1977). The work is organized by dynasty, like Album's, and illustrated by about 8,000 coin photographs. Text is largely limited to the general introductory section and brief remarks on each dynasty: the author's ideas on the evolution of the coinages are reflected in his organization of the material. As in Album's book, estimates of current prices are given. Both books should be useful, as guides to the identification of coins as well as in providing compact overviews of the development of Islamic coinage: both should be in any large research library. A more scholarly narrative treatment of Islamic coinage is projected by the present author for the Methuen/University of California "Library of Numismatics" series, but it will not appear for several years at least.

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Miles (1971) listed 55 mint names recorded after Zambaur's compilation. An alphabetical card index of Islamic mints and their known issues, similar to the *Münzprägungen*, is maintained at the American Numismatic Society (ANS). It is available for direct consultation, and is used to answer limited inquiries, but it is not possible to reproduce large sections of it.

Zambaur is also the author of another essential reference for the numismatist, his well known *Manuel de génalogie et de chronolo-gie* (1927). Although later dynastic lists by Bosworth (1967) and Bacharach (1974) are more up to date and handier, they are less comprehensive and, in contrast to the *Génalogie*, neither of them provides what the numismatist needs most: the extended titu-lature of most of the individuals listed, with an analytical index to the elements of titulature; for the portion of a ruler's name legible on a coin is not always that by which he is generally known today. The *Génalogie* is somewhat out of date: a revised edition, which should be the product of a co-operative effort by specialists in the history of each dynasty, would be valuable not only to numismatists.

The bibliography of Islamic numismatics is large and scattered. The starting point is L.A. Mayer's *Bibliography of Moslem Numis-matics* (2nd ed., 1954), which includes virtually everything published up to about 1950, no matter how trivial. Its arrangement is strictly alphabetical by author's name, with a subject index of dynasties, but this latter is impractical for the more impor-
tient dynasties (there are nearly 400 numerical citations under ‘Abbasids’. For subject access to the literature since 1900, one can also use the Index Islamicus (VIIIrd. Numismatics), which until recently lists periodical articles only. The printed Dictionary Catalogue of the Library of the American Numismatic Society (1962); supplements, 1967, 1973, 1978) can also help in compiling the bibliography of a subject. In it, most Islamic subjects will appear as subheadings under ‘Mohammedan,’ but one should also consult the country headings. The ANS library catalogues both monographs and periodical articles. The printed catalogue can be found in many large university research libraries. Album’s handbook, mentioned above, includes annotated bibliographies on each Islamic dynasty. For current bibliography, in addition to the supplements to Index Islamicus, there is the ANS publication Numismatic Literature (1947–1973); this provides an abstract of each entry: each issue has a subject index. Since 1955 there has not been published in connection with each International Numismatic Congress a survey of recent numismatic research, including a section on Islamic numismatics by a leading scholar; these are of great value (Miles, 1953, 1961, 1967; Brown, 1973).

Medieval Muslim writers have much to tell us about coins, although their statements should not be accepted uncritically. For example, it is quite unfair to accuse the Ayyūbid al-Kāmil Murshid of a “huge fraud” merely because the coin evidence does not support the assertion of much later Mamlūk historians that in 622/1225 he withdrew all of Egypt’s silver currency and replaced it with new dirhams of twice the silver content of the old; far more probably, the historians were simply misinformed about the nature of the reform. If indeed any such reform was claimed or intended. Similarly, our understanding of Umayyad monetary history has been much beclouded by efforts to make the numismatic evidence fit the conflicting statements of later writers, none of whom seems to have ever looked at a coin. In general, it is preferable to draw conclusions directly from the coins in isolation: if later historians happen to support these conclusions, so much the better. More valuable, of course, are statements by well-informed contemporaries about monetary events, and especially passing references to coinage and monetary practice in contexts not specifically concerned with the subject, for such references are not normally tendentious. Numismatists are most grateful for having such references drawn to their attention.

The two best known medieval works on coins are al-Bālādhūri’s Amr al-nuṣūqī’s Kitāb Futūh al-bulūq in the second half of the 9th century A.D., and al-Maqdisī’s Shudhūr al-nuṣūqī fī dhikr al-nuṣūqī, written in in 1438. The best edition of each of these is by Eustache (1968, 1969), with French translations and sophisticated commentary. Earlier editions of each are listed by Eustache, but one may add a new edition of the Shudhūr by Muhammad Babr al-Ūjārī (Najaf: al-Maktaba al-Haydariyya, 1967). In English, the Amr al-nuṣūqī will be found translated by Nitti and Murgotten as part of the Futūh (1916–24); an English translation of Maqdisī’s Shudhūr would be desirable. Many other authors touch on the history of coinage in historical, legal, and administra-

trative works. All then known references to coins in the medieval writers were gathered by Sauvage (1879–82) in his “Matériaux,” which is still important. For the medieval manuals of mint practice, see below under general problems in Islamic numismatics.

Research and study facilities.

If the raw material of numismatic research is the coinage itself, it follows that the place to do research is in the cabinets of the world’s great public coin collections. Unfortunately not every historian lives within commuting distance of such a collection. So, the historian would study of a single collection sufficient to build up a complete corpus of the material for even a limited topic. Since it is difficult and expensive to bring the historian to the coins, ways must be found to bring the coins, or adequate reproductions of them, to the historian. One obvious answer to this problem is the museum catalogue, but so far it has not been an adequate answer. Most of the world’s major collections have been catalogued to some extent, which is another way of saying that most of their holdings remain uncatalogued. It is not likely that progress in cataloguing will be rapid: A full-scale catalogue on modern standards is very time-consuming to prepare and expensive to publish. Moreover, even the best of the traditional catalogues provide photographs of only some of the coins, substituting more or less full verbal descriptions of the rest. Often one would like to be able to confirm or correct these descriptions by looking at the coin itself, while research on epigraphical style, ornamentation, die study, and the like necessitates visual examination. To a limited extent, museums can provide photographs or plaster casts of coins to researchers, but this too is expensive and time-consuming: someone has to do the work and foot the bill. At the ANS, for example, the charge for photography is $5.25 per coin.

A solution which has been adopted in Greek and medieval British numismatics is the sylloge. A sylloge reduces introductory matter and coin description to the minimum; it can do so because every coin in the collection is illustrated, observed and reverse, on a plate facing the page on which it is described. The need for specialized expertise and complicated typesetting is greatly reduced; making sylloges faster and cheaper to publish. For example, the ANS produces at least one fascicle per year of its Numismata Graecorum, each one presenting the Society’s complete holdings of a single region or district, mint by mint. With 800 to 1500 coins, each fascicle is comparable in coverage to Walker’s two British Museum catalogues combined, the product of a lifetime’s work. Greek sylloges are published in eight other countries, covering both institutional and private collections. A subcommittee of the International Numismatic Committee loosely co-ordinates the sylloges, but they are actually produced by and at the expense of individuals, institutions or societies in each country. The Sylloge of Coins of the British Isles uses a smaller format, but is similar in organization and principle to the Greek sylloges.

Uniform sylloges (perhaps instead they should be called Materiālis, or the like) of Islamic coins would be worthwhile and feasible. Ideally, these should be initiated and organized on an
international level; with some preliminary planning, the next International Numismatic Congress in Basle, 1979, or the Orientalist Congress in Teheran, 1980, would be appropriate venues for an organizational meeting. Or a U.S. group could set the example by producing syllokes of our own collections, in hopes that other countries might follow.

At present one still has to go to the museums or their catalogues. What follows is a listing of major collections of Islamic coins, with those of North America discussed first.

North American collections:

The American Numismatic Society (156th Street and Broadway, New York, N.Y. 10032) has this continent's pre-eminent collection of Islamic coins, one of the world's best. Although no overall figure for the size of the collection can be given, it is rich in every series and generally well-organized. Any researcher is welcome to study the collection in the Society's coin room without formality, but it is best to arrange extended study in advance. The Society can provide casts, Polaroid and ordinary photographs, and slides of its coins (a charge is made, and large orders are discouraged). In addition to its coin collection, the ANS has the world's best numismatic library, which offers interlibrary loan and photocopy services (for information, write to Mr. Francis Campbell, Librarian). The library has rare 18th and 19th century works, complete runs of most numismatic journals, a large file of numismatic offprints from other journals, extensive holdings of dealers' auction and fixed-price catalogues, and a fairly good library of works on Islamic history and civilization. The ANS is unique among the world's great coin cabinets in that it is a private institution, supported by its endowment, private gifts, the occasional special purpose foundation or government grant, and the dues of its members. Membership is $15.00 per year, which includes receipt of the annual Museum Notes, a research journal; the semi-annual Numismatic Literature, which lists and abstracts current publications; and the Annual Report, including descriptions of new accessions in each department.

The Smithsonian Institution (Numismatic Department, Museum of History and Technology, Washington, D.C. 20560) has this country's second major Islamic collection. The collection of several thousand coins is well-organized and includes many rarities. Inquiries and requests for research permission should be addressed to one of the Curators, Dr. Vladimir Clain-Steppanelli or Mrs. Elvira Clain-Steppanelli (sometimes it is helpful to follow up with a phone call: 202-381-5028). The resident Islamic specialist, Mr. Raymond Hebert, has a large and well indexed data file.

A number of North American museums and institutions of higher learning have holdings of Islamic coins. Recently the ANS committee on Islamic and South Asian Coins conducted a survey of institutions likely to have Islamic material; the listing below, by state or province, is based upon replies to that survey and to earlier surveys by the ANS of more general scope. An integrated and indexed file of the returns from these surveys is kept at the ANS and is available for consultation. Corrections and additions to the following list are invited and will be added to our file. Only institutions with substantial holdings (over 100 coins) are included.

CALIFORNIA. Lowe Museum of Anthropology, University of California, Berkeley 94720. Over 200 Islamic, mostly Ilkhanid.


MICHIGAN. Kelsey Museum, University of Michigan, Ann Arbor 48109. Substantial Islamic collection: no figures available.

ONTARIO. National Currency Collection, Bank of Canada, Ottawa K1A 0G9 (Maj. Sheldon S. Carroll, Chief Curator). About 143 coins and 100 weights, stamps, and seals.


NEW YORK. Metropolitan Museum of Art. New York 10028. Dept. of Islamic Art has 45 miscellaneous Islamic coins, some of special artistic interest, plus 640 coins from the Nishapur excavations.

OHIO. Toledo Museum of Art, 43697. Ill Islamic glass coin weights.
Collections Abroad:

Much of the information below comes from reports to me by scholars who have visited the collections, to whom I am most grateful; but I have not acknowledged this help by name, for it is better that responsibility for errors and misunderstandings rest on me alone. Additions and corrections are welcome. Even though most collections are easily accessible for study by qualified scholars, it is always a good rule to inform the curator or director of the institution well in advance of arriving. Some countries also require government approval for any research within the country by foreigners. Scholars planning numismatic research overseas are welcome to write to the ANS for additional information about the museums they intend to visit.


ALGERIA. The Musée Gustave Mercier, Constantine, and the Musée National des Antiquités, Algiers (formerly Musée Stéphane Gsell) both have Islamic collections.

AUSTRIA. Bundesammlung von Medaillen, Münzen und Geldzeichen. The Kunsthistorisches Museum, Vienna. The Islamic material is uncatalogued and little known; apparently it includes the former Zambaur collection.

BELGIUM. Cabinet des Médailles, Bibliothèque Royale. The Cabinet recently acquired 372 coins from the collection of the late Robert Gurnet.


DENMARK. Den kgl. Mont- og Medaillesamlung, Nationalmuseet, DK-1220 Copenhagen K. Catalogue: Dr. phil. Otto Mørkholm (1939): not wholly reliable, but the staff is very good about providing photographs for confirmation or correction of Østrup's descriptions.

EGYPT. Greco-Roman Museum, Alexandria. George Miles noted some interesting Islamic coins there in the early 1950's; their present situation is unknown. Dar al-Kutub (National Library), Cairo. An important collection. A recent visitor reports that the collection seems to be as Lane-Poole recorded it, without addition or loss; but it is stored away and not easily accessible, despite the co-operative attitude of the staff. Catalogue: Lane-Poole (1897); includes Rogers Bey Collection (for additional details, listed Journal of the Royal Asiatic Society 1875, catalogued Numismatic Chronicle 1883).

FINLAND. Soumen Kansallismuseo, PL 913, 00101 Helsinki 10. Catalogue: Granberg (1966; includes all Islamic hoards found in Finland, in various museums).

FRANCE. Cabinet des Médailles, Bibliothèque Nationale, 58, rue de Richelieu, Paris 75002. One of the world's great collections, with much new uncatalogued material. Curator: Raoul Curier (retiring 1978). Catalogues: Lavoix (1887, 1891, 1896); Cottevieille-Giraudet, Revue numismatique 1934-35; Launois (1971); Guillou (1953). Gilles Hannequin has undertaken a fifth volume of the series begun by Lavoix, "from the Turks to the Mongols." Plans for the fourth volume are unknown.

GERMANY (EAST). Staatliche Museen zu Berlin, Bodestrasse 1-3, 102 Berlin, DDR. A major collection, with some 35,000 "Oriental" coins; quite accessible. Curator: Dr. M. Simon. Catalogue: Nützel (1898-1902); includes Guth collection, catalogued by Lane-Poole (1874).

GREAT BRITAIN. Department of Coins and Medals, Fitzwilliam Museum, Cambridge. A small collection, but with many interesting rarities. Curator: Mr. Terry Volk. Department of Coins and Medals, The British Museum, London WC 1B 3DG. One of the world's great collections, and the only one to have been fully catalogued, although the catalogue is now out of date. Curator: Mr. Nicholas Lowick. Catalogues: Lane-Poole and Poole (1875-90), Poole (1887); J. Allan, Numismatic Chronicle 1919 (new acquisitions); Walker (1941, 1955). A third volume in the series begun by Walker has been undertaken by Lowick, on the coinage of the 'Abbasids.


IRAQ. Iraq Museum, Baghdad. This is the most active center of numismatic research in the Middle East, with a large well-organized collection and a staff of specialists. Accessibility is good, provided one has permission to do research in Iraq. Curator: Mrs. Mahbâb Darwish al-Bakrî. Catalogues: Naghabandî (1953, 1969); Naghabandî and al-Bakrî (1974); and numerous articles in the Iraqi journals Sumer and al-Maskûkit, by various authors.

ISRAEL. Israel Museum, Hakirya, Jerusalem 91000. The Islamic coins are primarily excavation finds. Curator: Dr. Yaakov Meshorer.

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L.A. Mayer Memorial Institute for Islamic Art, 2 Palmaryt St., Jerusalem. This new institution now has only a very small collection of its own, but is primarily known for a fine exhibition catalogue including much borrowed material (Berman, 1976).
INDIA. Many Indian museums have large collections of Islamic coins, but these are mostly issues of the subcontinent, outside the scope of the present survey. A list of catalogues will be found in Singhai (1952). The Journal of the Numismatic Society of India 23 (1961) included brief histories and descriptions of Indian cabinets.

ITALY. Gabinetto Numismatico Municipale, Castello Sforzesco, Milan. A large collection. Catalogues: Castiglioni (1819), Schiepatti (1820), Ghiron (1878).


JORDAN. Jordan Archeological Museum, P.O. Box 88, Amman. Catalogue: Forthcoming, by Dr. Aida Arif.


LIBYA. The numismatic collections of Libya have been surveyed by Dr. Dickran Kouymjian for UNESCO; his report, however, has not been released for public distribution.

MOROCCO. Musée Numismatique, Bank du Maroc, Casablanca. The nucleus of the Bank's holdings is the collection of 12,000 Maghribi coins of Brethes. Curator: M. Daniel Eustache. Catalogues: Brethes (1939; previously unpublished coins only). Eustache projects a series of articles and monographs cataloging the entire collection: see the first of these (1970-71), p. xvi, for a complete list. Also in Morocco, the Musées des Antiquités in Rabat and Colubris report holdings of Arab coins.

MENA. Islamic dirhams found in Norwegian hoards, and possibly other Muslim coins, are to be found in the Historisk Museum of the University of Bergen and the Universitetets Myntkabinett, Oslo.

PAKISTAN. Central Museum, Lahore. The very fine collection includes not only coins of the subcontinent but also of the Afghan highlands and further west. Catalogue: Whitehead (1934; other museum catalogues relate mostly to the subcontinent). The National Museum of Pakistan, Karachi, also has an important collection.

POLAND. National Museum, Warsaw. About 2,000 Islamic coins, no doubt mostly from dirham hoards of the 8-10th centuries found in Poland. Director: Dr. Alexandra Krzyzanowska. Several provincial museums in Poland also contain such hoards.

PORTUGAL. Museu Numismatico Portugues, Casa de Moeda, Av. Dr. A.J. de Almeida, Lisbon 1. Catalogues: Figanler (1949, 1959; the first volume has many errors, partly listed in the second volume, p. 168).

SPAIN. Gabinete Numismatico, Museo Arqueologico Nacional, Madrid. A rich collection; as would be expected, especially good for Spanish Arabic and Maghribi coinages. Conservador: Jefe: Clarisa Millán. Catalogue: Rada y Delgado (1992). Also in Madrid, the Museo de la Fabrica Nacional de Moneda y Timbre has a substantial collection of Arab coins, as do many provincial Spanish museums, especially in the south; but these latter are often disorganized and neglected. Miles, on pp. 1-14 of his corpus of the Umayyads of Spain (1950), has brought together much useful information on Spanish public and private collections and catalogues.

SWEDEN. Royal Coin Cabinet—National Museum of Monetary History, Box 5405, S-114 84, Stockholm. The Islamic collection must number several tens of thousands, mostly 8-10th century dirhams found in Swedish hoards. Keeper: Dr. Brita Malmer. Catalogue: Tornberg (1848). A team of Swedish scholars headed by Malmer has undertaken the complete publication of all hoards of the Viking era found in Sweden; the first volume (1975) covers finds of 7 parishes in Gotland in 197 pages.

SWITZERLAND. Münzkabinett, Bernisches Historisches Museum, Box 5405, S-114 84, Stockholm. The Islamic collection includes not only coins of the subcontinent but also of the Afghan highlands and further west. Catalogues: Brethes (1939; previously unpublished coins only). Also in Switzerland, see Miles (1966).

SYRIA. National Museum, Damascus 4. An important but uncatalogued collection. Curator: Mr. Muhammad al-Khouly; or Dr. Afif Bahmassi, General Director of Museums and Antiquities (office at the museum).

TURKEY. Istanbul Arkeoloji Müzeleri. One of the world's major Islamic cabinets, where all government owned Islamic coins are gathered (including, e.g., the former collection of the Ethnographical Museum, Ankara). Not all the collection is organized, and much is stored elsewhere in a bank vault. I am told that until recently, the Museum Director can authorize limited work on the coins by foreigners without official research permits. Curator: Dr. Ibrahim Artuk (to retire in 1978). Catalogues: Ghabib (1993-94, 1994-95); Mubarak (1900-01); Tevbidi (1903-04); Jall (1915-16); Artuk (1970-74; coins on exhibition only).

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Numismatic Organizations:

The world co-ordinating body for numismatics in general is the International Numismatic Commission, a body made up of 77 delegates of major coin cabinets, numismatic societies, and national mints in 34 countries and 20 honorary members elected for distinguished service to the field. The commission is affiliated with the International Congress of Historical Sciences (which the commission organizers) and may also meet on the occasion of an International Congress of Historical Sciences. Between meetings it is governed by a bureau of 3 to 12 elected members which meets annually in Europe. The commission encourages scholarly cooperation (financial and otherwise) innumismatics by lending its patronage (financial and otherwise) to symposia and publications (such as symposia and publications) and by discussion of issues of principle or matters of and, where possible, solutions of principle on matters of common interest. It publishes an annual Compte rendu, reporting on activities of the year and also including surveys of numismatic collections in different countries. Copies of the Compte rendu are available from the ANS. The commission pays too little attention to Islamic numismatics, but this would change if Islamicists become more vocal in demanding attention.

The only other international organization of interest to Islamic numismatists is the Oriental Numismatic Society, with headquarters in New York. The ONS is dominated by collectors, but it is well worth the money for scholars as well. The bimonthly newsletter contains news of activities in the field, an up-to-date list of recent and forthcoming publications, and short reviews and notes. Members also receive several times a year mimeographed "Information Sheets" treating coinages not otherwise covered in the literature; for example, Tarizzo's three valuable Information Sheets (nos. 13, 15, and 18) on the Islamic coins of Tunisia, A.D. 704-1228. The North American membership secretary is Patrick D. Hogan, 614 So. Johnson St., Iowa City, IA 52240 (initial membership is $7.00, thereafter $5.00 annually).

Teaching of Islamic numismatics:

A seminar in Islamic numismatics was offered by Andrew Ehrenkreutz at the University of Michigan in 1966 and 1967, but there are no plans to repeat it. Seminars in numismatics with prominent attention to Islamic numismatics have been given recently by Jere Bacharach at the University of Washington and John M. Smith at Berkeley. The major opportunity for numismatic instruction is the American Numismatic Society's Graduate Seminar, from mid-June to early August every year. Lectures provide a general introduction to the history of coinage and numismatic methodology. The students undertake an original research project under the supervision of the relevant curator, presenting their results orally in the last week of the Seminar, and then in writing. Many of the projects result in publishable articles. Only graduate students or recent Ph.D.s associated with North American institutions may apply: the deadline each year is March 1. There is a stipend of $750. Alumni of the seminar may apply for a $3000 grant to support dissertation research on a numismatic subject.

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Brethes, J.D. Contribution à l'histoire du Maroc par les recherches numismatiques. Casablanca, 1939.


Yapi ve Kredi Bankası, Istanbul. Müııımatik Yayınları.


of the ordinary austere, unornamented (but nevertheless attractive) Kufic of the overwhelming mass of early Islamic coinage. The \textit{naskh} and \textit{nastaliq} scripts of later issues also await sophisticated analysis. The introduction of \textit{naskh} is discussed by Sourdel (1963-64) and Balog (1949). One can find general remarks on style in the introductions to most large dynastic catalogues.

Orthography and grammatical usage also remain largely unstudied. An example of the use of orthography as evidence for early dialects is provided by Curiel (1966), who argues that the transliteration of Arabic \textit{jam} by Pahlavi \textit{K}, as well as by Z, indicates that both hard and soft \textit{jam} were acceptable to first-century Arabs. A parallel instance is the Arabic spelling "Jayy" for the Pahlavi name "GY," an old name of Isfahan (Mochiri, 1972, pp. 27-31). In later times, coin inscriptions also occasionally reflect colloquial or dialectal pronunciations, as on an Ottoman issue of Tilmisn, 1003 H, where the year is clearly spelled \textit{za'iz}, with points (unpublished, in the ANS).

In several respects, the study of mint names can go beyond the numismatist's traditional preoccupation with listing and identifying names, and adding to the list. For example, the province Sijistan appears commonly as a mint name in the first four centuries, but often one finds instead the name of its capital Zaranj, sometimes in the form Hadinat Zaranj. What is the significance of these changes in the nomenclature of what is presumably the same mint? Do changes from province name to city name, and back again, indicate changes in the administrative level at which the mint is controlled? And what is the significance of the prefix Hadinat? Does it indicate that the mint at certain periods was actually located within the walls of the citadel, not in the surrounding town? The same phenomena occur on coins of other mints; only comparative study can show whether such variations are significant.

The appearance of the same orthographical peculiarities on the coins of different mints may suggest some degree of centralized control of minting, and thus provide evidence for administrative boundaries. Similar evidence is provided by changes in the distribution of mints. In the Umayyad East at certain periods, there were many dirham mints scattered throughout Iran and Iraq; at other times, coins were struck only at one or two central mints. Centralization and decentralization of minting were no doubt reflected as well in other aspects of administration, especially in tax collection. Moreover, extreme centralization of minting must have had economic effects, lowering the "price" of money at the center and raising it in outlying areas because of transportation costs.

One might say in general that numismatists have traditionally approached Islamic coinage at the wrong end, in certain respects. Muslim coins have always been catalogued and studied by the issuing authority, that is by dynasty and ruler; whereas, a better understanding of the historical development of Islamic money and its significance for administrative, economic and cultural history might be achieved by studying first the issues of individual mints, regardless of political changes, and then combining these mint studies into provincial and regional histories. [The latter approach is customary in most fields of Western coinage.]
Mint histories are not new in Islamic numismatics. Extended studies of major mints include the classic work of Miles (1938) on Rayy, Stern (1967) on Amul, Welin (1955-56) on Wāsit, and al-Ḥusaynī (1970) on Kūf. Al-ʿUsh has prepared a history of the issues of Damascus, still in press. As for provincial histories, one can think only of studies relating to provinces which correspond in some way with modern national entities: Adharbayjan (Pakhomov, 1959-63), Armenia (Mushegian, 1973), and Ifriqiyya (Tarizzo, 1976-77), as well as many works on Spain and Egypt. Despite the diverse merits of these studies, there is still no history of an Islamic mint, even for a limited period, comparable to (e.g.) Margaret Thompson's *The New Style Silver Coinage of Athens*, which not only lists every known die variety of a massive coinage during 113 years, but also pulls all the details together into a comprehensible history of the Athenian mint usable by economic and political historians as well as numismatists.

For the Muslims, the ruler's name on coins was an important expression of sovereignty; hence, the importance to the numismatist of a firm grasp of Islamic titulature, as well as the importance of numismatic evidence for the study of titles. Al-Ḥusaynī (1970) provides one instance of the rich data for titulature to be found on the coins of a single mint, Kūf. Most numismatic monographs have analytical indices of names and titles, and often discuss titulature in *extenso* in their introductions—an excellent example is Hazard, 1952, on late medieval North Africa. Interesting recent studies of titulature using numismatic evidence include Madelung on the Būyids (1966), Bosworth on the Ghaznavids (1962), and Richter-Bernberg on the Khwārizmshāhs (1976).

Most religious legends on Muslim coins are conventional, but even clichés had had a living meaning at the time of their introduction. Why did ʿAbd al-Malik select the three Qur'ānic passages he used on the first truly Islamic coins of A.D. 696-697, passages which became standard on Islamic coins for many centuries thereafter? An illuminating answer is suggested by Grabar (1973), in his discussion of the same passages in the context of the Dome of the Rock Inscriptions. One can imagine that other equally suggestive answers could be provided, especially if these inscriptions are considered by specialists in religious and intellectual history. The many instances of the introduction of new religious slogans, and the abandonment or revival of old ones, are too numerous to begin to list here. Recent examples of the kinds of studies which can be made include those by Launois on the Zirids (1964) and Fāṭimids (1971), and Bulliet (1969) on the issues of Nīṣābūr, 387 H. S.M. Stern comes to mind as a leading intellectual historian who consistently made use of numismatic evidence, not only in his numismatic articles (1949, 1967), but also in such works as his study of the succession to the Fāṭimids Caliph al-Amir (Oriens, 1951). A useful list of several hundred religious slogans, with indications of the coins on which they are to be found, has been compiled by al-Ḥusaynī (1975).

**Images and Ornaments**

Although religious opinion in Islam frowned on the use of images in public official contexts, Images are common enough on Islamic coins. Their special attraction for Western scholars has produced a large literature, but the often obscure problems of their meaning and the motivation for their use in each specific case are not susceptible to generalization. Sometimes these images provide evidence for details of costume not elsewhere available; e.g., Miles (1967) on the regalia of the Umayyad caliph. Notable examples of the use of images up to the 8th/14th centuries are listed by al-ʿUsh (1971), who regards them all as vestiges of classical influence.

More abstract ornaments, ranging from complicated interlaced *tanghās* to mere dots, often prove to have significance beyond decoration. For example, the changes in the pattern of marginal decoration on anonymous eighth-century Umayyad dirhams of Iraq has been shown to coincide with the tenures of the province's governors (De-Shazo and Bates, 1974); the presence or absence of the bow-and-arrow *tanghā* on Seljuk coins may reflect changing political relationships among members of the dynasty (Bulliet, 1974); revisions of the ornamental frame and the arrangement of the legends on coinage denote modifications in their weight standard (Smith, 1969). Unfortunately, this kind of non-verbal information was often meant to be accessible only to those who understood the code; today one can see the pattern without always being able to discern the meaning.

**Numismatic Methodology**

A good up-to-date introduction to methodology is Dentzer *et al.*, *Numismatique antique: Problèmes et méthodes* (1975), the product of a colloquium designed to present the basics of numismatics in a sophisticated way to non-specialist historians and archeologists. The general articles by Hackens and Naster are especially useful. Although the work deals primarily with Greek and Roman coins, this is not a disadvantage for the Islamicist; most of the techniques are equally applicable to any kind of hand-struck coinage. Ancient numismatics is the most advanced specialty within the discipline, but because of the master/disciple method that has generally prevailed in transmitting numismatic methods, many Islamic numismatists are unaware of the high level of the state of the art in other fields. One can also learn a good deal about methods from Grierson's *Numismatics*, Chapters 4 to 7, even though it is rather brief on most aspects.

Since the dies for pre-modern coins were engraved by hand, each one was different in detail, even if the inscriptions and ornamentation were the same—pace Balog, 1949, 1951, whose argument that multiple identical dies were cast from a single master has not won general acceptance. By close study of a series of "duplicate" coins, one can identify each of the dies used to strike the obverses and reverses. Furthermore, since the two parts of a pair of dies were not ordinarily fastened or kept together, one usually finds that a particular obverse die was used with more than one reverse die, and vice versa. The ramifications are complex (see Hackens, "Terminologie"), but from a knowledge of the number of obverse and of reverse dies used for an issue, the ways they were used together, and the stages of deterioration each die went through during its life, one can tell a great deal about the operations of the mint, the size of
is the question, and the chronology of the issue. It is the former benefit that has made die study the fundamental technique in ancient, medieval and Byzantine numismatics. Coins are not usually explicitly dated. In these fields, the age is considered to be fully "known" until a complete repertory of obverse and reverse dies and their relationships has been established, supported by published photographs of enough coins to illustrate every obverse and reverse die and every obverse/reverse combination.

No such full-scale die study has been published for any Islamic series, but some limited work has been done. Miles (1967) studied the issues of the Cordoba mints in 400 H, but merely recorded the number of dies found for each obverse and reverse variety; die links were noted only when a single obverse variety was found with more than one reverse variety, and there are no illustrations. The most active student of Islamic dies is Andrew Ehrenkreutz, who has amassed a large file of photographs of Egyptian dinars from the Abbāsid to Ayyūbid times. His work, as exemplified by his most recent study, on the Rûmûd dinars (1977), is primarily concerned with counting dies as an index of fluctuations in annual production. No attention is paid to the pattern of die links, and though it can be reconstructed from the list of dinars examined—the results are rather interesting—nor are there any illustrations. One hopes that Ehrenkreutz will ultimately publish his full photographic documentation, so that students who come upon a new Egyptian dinar can tell whether it is a die duplicate of one of those Ehrenkreutz studied, or is from a new die, thereby modifying his estimates of production. On statistical grounds, it can be expected that more dies and more obverse/reverse combinations will be found. In any case, great caution must be exercised in the use of the die-count method (see Grierson, Numismatics, pp. 156-157).

In any die study it is important to know—and die study is one way to find out—which side of the coin was customarily struck with the upper die and which with the lower, because of the differing rates of wear of the two dies. This question, unfortunately and wrongly, has become linked with the problem of designating the obverse and reverse of Islamic coins. Since Greek numismatists, who set the style for the entire discipline, have agreed by convention to regard the obverse of their coins as the side struck by the lower die, considerable heat (but only a little light) has been produced by efforts to determine which side of Islamic coins was struck by which dies. There is, however, no inherent reason to link what are really three separate questions:

- Which side of the coin did contemporaries regard as the obverse, face, or front?
- Which side of the coin was struck by the lower die? and
- Which side of the coin should modern scholars designate as the obverse in their publications?

The falsity of the link between obverse and the lower die is proven by al-Hamdānī, a ninth-century authority on mint practice, in his Jāhâratayn (pp. 344-345), where he says that the side that he (and we) considers to be the obverse, the side with the shahâda, was struck by the upper die. On the evidence of the coins themselves, without knowing of al-Hamādānī's statement, Bacharach and Awad (1973) found that the side with mint and date was consistently struck by the upper die, but in a note appended to their article, Lowick was able to cite a coin with the mint/date formula and shahâda struck by the lower die, an exception also to al-Hamādānī's statement. Obviously, it is impossible to generalize.

Other evidence, including coins struck from two "obverse" or two "reverse" dies, shows that in many cases Islamic minters did not particularly care which side of the coin was struck from which die. As Bacharach and Awad recommend, it is safest to ignore dies in designating obverse and reverse. Rather, in catalogues and other publications, one ought merely to be consistent internally and with established practice. The determination of which side of the coin was struck by which die must be made separately for each series.

The study of hoards is another fundamental technique of numismatics. Strictly speaking, a hoard is a body of coins deliberately hidden by someone who was unable to recover them, but the term is often extended to other finds of coins in quantity, such as accidentally lost purses and cash boxes, and with less justification, funerary deposits and votive accumulations. Although hoards are often a source of new coin varieties, the value of a hoard is greater than the sum of its parts: the fact that a body of coins was found together tells us something about the nature of the monetary stock in circulation at a given time and place. Just so, the value of a number of hoards from the same area and period, studied in comparison, is greater than the sum of the evidence each of them provides in isolation. The context in which a hoard is found is important evidence for the interpretation of the find, but unfortunately, most Middle Eastern hoards are not found in controlled scientific excavations, nor do the treasure trove laws of most countries encourage finders to come forward so that scholars can examine the context and ensure that the hoard is complete.

On the contrary, Islamic hoards most commonly appear suddenly on sale in the bazaars, or are smuggled out to Europe or America, or worst of all, go directly into the melting pot. Nevertheless, a hoard provides valuable evidence even when divorced from its context. By examination of the contents, one can usually date its original deposition and judge whether it has been subjected to non-random selection—the parts of a hoard that have been arbitrarily split up are still useful as evidence, but when a dealer or collector has pulled out the more interesting or valuable coins, much of the scholarly value is lost—or whether coins have been added. For general guides to the study and interpretation of hoards, see Grierson (1975, Chapter 6) and Hackens' "Circulation."

There are too many good publications of Islamic hoards to list them all, but Lowick (1975) may be cited as an excellent model. The problem in this area is really a lack of personnel: more hoards appear in trade than there are scholars to study them, so that often they are broken up before they can be recorded. The ANS Committee on Islamic and South Asian Coins has tried to solve this problem in part by maintaining a file of experts in various fields who are willing to study such hoards; those who would like to add their names to the list should write to the ANS. Study of a hoard is an ideal
Fineness, the proportion of precious metal in a coin, is the other component of its basic value. The principal methods used nowadays to find the metal composition of a coin are specific gravity determination, neutron activation analysis, and X-ray spectroscopy. These methods are described in an indispensable collection of articles by scientists and numismatists, edited by Hall and Metcalf (1972)—the general considerations advanced in the article by Naster and Hackens are equally valid for Islamic analyses—and in Condamin's article in Dentzer et al. (1975). Specific gravity determination is useful only for an approximation of the fineness of relatively pure gold coins, and only if the other main constituents are known from literary evidence or some other method of analysis. Neutron activation analysis and X-ray spectroscopy provide data on all the constituents of the alloy, but require specialized technical expertise and expensive equipment. In effect, numismatists and historians are dependent upon the cooperation of interested scientists for this kind of study; only one of the world's major coin cabinets, the British Museum, has the necessary equipment and expertise available on demand within the institution.

This is a shame, because, as Claude Cahen constantly insists, fineness is an essential feature of coins that ought to be included in any catalogue. Indeed, fineness is even more important for monetary history than weight standard, because coins were often traded by weight, not tale, especially in exchange transactions.

There is a substantial body of published data on fineness of Islamic coins. Metcalf, in the Hall and Metcalf volume (pp. 391-398) gathers the Islamic studies to that time (ca. 1970) with extremely useful commentary. He overlooked an important and well-done study of dinars of a number of dynasties of the tenth and eleventh centuries by Ehrenkreutz (1963). Other, more specialized, studies are cited in Part 4 of this survey.

Large gaps in our knowledge of the metal composition of Islamic coins still remain, especially with silver and copper coins for which the relatively convenient specific gravity method is unusable. Two important suggestions may be made for future studies. First, a substantial number of coins has to be analyzed for reliable conclusions to be drawn. One cannot safely extrapolate the alloy standard of a dynasty, ruler, mint or year from the analysis of one or two coins. Even die duplicates, that is, coins known to have been struck in the same workshop at nearly the same time, can vary somewhat in fineness because of deficiencies in mint technique or slipshod quality control. Furthermore, all methods of measurement of fineness, except destructive chemical analysis of the whole coin, are subject to error because the metallic composition of a coin is not homogeneous, nor is the density of an alloy always uniform—the density and therefore the specific gravity of a gold coin, for example, can vary according to the force of the blow by which it was struck. One has therefore to analyze a number of specimens and take an average figure, or the mode.

The second imperative is to identify and describe each coin analyzed as specifically as possible. It is not sufficient to analyze one or several coins of, say, the Fatimid al-Mustansir without further identification; al-Mustansir had six successive coin types, which can be closely dated, and the historians indicate that at least some of the changes in type correspond to changes in silver fineness. The types can be distinguished by changes in the arrangement and content of the inscriptions. It cannot be taken for granted that fineness was unchanged throughout a ruler's reign, or that it was the same at every mint of a dynasty. Aside from this descriptive identification, each individual coin must be specifically and unambiguously distinguished from other similar examples, so that...

There are many studies deriving information about minting techniques from features of the coins. The modern commentaries on the medieval works listed above will provide a basic bibliography; in particular, Toll (1970-71) precedes his summary of the medieval manuals with a survey of modern findings. Balog (1955) summarizes his valuable work on this field. The works cited above on die studies, metrology and analyses of metal content all shed light on minting technique and procedure. Errors and defects in striking of coins are the most fruitful source of information on production methods; recent examples include Illisch (1971, 1973), Bacharach and Awad (1973), and Stepková (1975).

Modern descriptions of mints operating in traditional fashion are not to be overlooked as evidence for medieval practice. One obviously cannot uncritically project these descriptions back into earlier periods, but they provide models for the interpretation of medieval evidence. I can cite only a few such descriptions; there must be many more that could usefully be collected in an anthology.

The 18th-century Ottoman mint in Cairo was described in great detail by Samuel Bernard, who was made director of the mint by Napoléon, in the Description de l'Egypte, VI (1813); no recent author has utilized this work, nor have I seen it myself. Foyer, quoted in NC (1882, p.300), describes the mint of Kirmān in 1878; other information on the mints of Iran under the Shāhs is collected by Rabino (1945).

Descriptions of Indian mints in the 18th and 19th centuries are numerous; Temple (1889), on the Patiala mint, and Ahmad (1961, 1962), quoting East India Company reports on the 18th-century Banaras mint, are illuminating examples. Bhattacharyya (1974) used surviving mint records to describe the working of the Indore mint in the 18th and 19th centuries. Perhaps such mint records survive undiscovered from further west: Olcer (1978) recently rescued the 19th-century records of the Constantinople mint (from the period after the adoption of Western machinery) just as they were about to be burned. The records were in Ottoman Turkish, but written in Armenian script, since the officials were Armenian.

The medieval and modern descriptions are also the principal sources for the personnel and the internal organization of mints, along with casual references in other sources to persons who happened to hold mint offices. The Geniza documents are a rich source...
of such incidental references, as evident from Goiten’s Mediterranean Society. The personnel included supervisors, clerks, smelters, die engravers, strikers, assayers, etc., as one might expect. Hypothetically, these all might be salaried employees of the state, but in fact, whenever the evidence is explicit, it seems that their remuneration was exclusively from fees paid to each worker by the customers of the mint (Goiten, Med. So., II, p. 358; al-Makhzumi, tr. Cahen, 1974; Ahmad, 1961, 1962). In the Banaras mint (Ahmad), the lower employees paid (annually?) fixed “entrance fees” to the higher officers for the privilege of working in the mint; these fees were recouped (or not, depending on the volume of production) by fees charged to the customers. Generally, the fees of the workmen and officers were in addition to the seigniorage, the government’s fee or tax on minting. The seigniorage might be collected directly, or farmed to private contractors (Ehrenkreutz, BSOAS, 1954, pp. 509-510; cf. Goiten, cited above). The total charges for minting, as stated in the mint descriptions cited above, ranged from 0.875% to 5%.

The mint’s customers were the state, on one hand, and private individuals on the other. The state would have recourse to the mint only when it had revenues in bullion or non-current (old or foreign) coin, primarily from booty, confiscations, or state-owned mines; taxes would normally be paid in current coin. Private citizens would bring bullion and non-current coin to the mint only when the cost of coin obtained there was less than the cost of current coin obtained from money-changers. In Egypt specialists called murids or mawrids handled the business of assembling small lots of bullion and bringing it to the mint (Ehrenkreutz, BSOAS, 1954; Goiten, Med. So., I, p. 267). Presumably their buying prices for gold and silver reflected a profit for themselves in addition to the mint fees and seigniorage they had to pay, adding to the cost of coinage to the ordinary citizen.

Although some modern writers speak of the state’s or the mint’s search for supplies of precious metal for coinage, this seems to be a misconception. All the evidence suggests that the mint only responded to demand: if the state or individuals had metal and brought it to the mint, it would strike their metal into coins; if no one needed this service at a given moment, the mint did not operate. Theoretically, large mints may have struck coins in anticipation of demand, ready to deliver immediately to anyone who brought in bullion, but even this possibility seems a hazardous assumption in the absence of explicit evidence for it.

Modes of external control and administration of the mint seem to have varied widely. The essential questions are:

- Who determined monetary policy? and
- Who saw to it that it was carried out?

Control of the mint was an important attribute of sovereignty for medieval Muslims, and in legal theory, supervision of the mint was a responsibility of the caliph or sultan; but in practice, this must have depended largely on the interest and competence of the sovereign in such matters and on the degree of centralization of his administration. The numismatic evidence shows that coinage was indeed sometimes highly centralized and carefully regulated, but it is clear that at other times monetary policy was set by regional, provincial or city officials. Often gold and silver coins were closely controlled, while copper was left to local authorities. An interesting example of the complexity of this question is the uniform silver coinage of the Umayyads, which is uniform in arrangement and content of inscriptions from Spain to Khurasan, but varies at some periods from province to province in weight standard and fineness. Were such variations due to local autonomy, or to differing interpretations of central directives? It has been all too common to speak of Umayyad, Fatimid, Mamluk or Ottoman monetary policy, without attention to the evident regional variations in the coinage of even the most centralized dynasties.

It would be interesting to know what were the theoretical considerations which shaped monetary policy decisions in the medieval Muslim world. No comparative examination seems to have been made of the statements of Muslim legists and political thinkers about the function of coins and the mint. One ought also to undertake a careful analysis of the motivations ascribed to rulers by historians in their occasional references to changes in the currency. The economics of money is notoriously arcane still today; it seems dangerous to assume much sophistication on the part of medieval rulers.

It is interesting to see that Ibn Khaldun, in discussing the role of the mint (Muqaddima, II: 47-48), limits it to the provision of coinage of reliable fineness with a mark of guarantee, so that transactions may be made with confidence. If the coinage is also of regular weight, transactions can be made by count, but this implies only a convenience, not a necessary element of sound coinage. The level of fineness is also immaterial, as long as it is generally acceptable and uniform in a locality. One wonders whether medieval Muslim rulers were more sophisticated than this in their notions of coinage as a factor in economic welfare; on the other hand, it is not unlikely that they were sometimes more sophisticated in their understanding of how coinage could be manipulated for their own profit. Beldiceanu (1960-64) has collected a number of mint directives of the early Ottoman sultans, which are first-hand evidence of the considerations affecting mint policy in one late medieval state.

The role of coins and the mint in the pre-modern economy has been already touched upon more than once; a full consideration of monetary economics would exceed the bounds of this survey. Nevertheless, some understanding of how coins were used in daily life is usually a prerequisite for interpreting numismatic evidence. The indispensable starting point for pre-modern monetary history is the work of Gilles Hennquin, principally his Problems (1972), but also his other more recent articles, of which the latest (1977) cites the others. With a wealth of citation, not only of works on Islamic money but also studies in classical, medieval Western, Byzantine, Indian and Chinese economic history, as well as modern economic texts, Hennquin sets forth clearly the differences between the monetary systems of earlier times and those of the 19th and 20th centuries. In particular, Hennquin shows convincingly that all coins
before the 19th century liberal era must be presumed have circulated at a premium over their intrinsic bullion value, a premium set at first by the costs of minting (seignorage, mint workers' fees, transportation, etc.), but thereafter varying in the marketplace in accordance with supply and demand. Not only did silver, gold, and copper coins fluctuate in price in relation to the corresponding raw metals, but also against each other; moreover, even the exchange rate of two different coinages in the same metal would fluctuate around a norm set by their relative precious metal content. Hennequin stresses that, in the absence of explicit evidence, we cannot assume that any pre-modern government ever effectively guaranteed the exchange rate of any of its issues against bullion or against other coins, by standing ready both to buy and sell at a single fixed rate. In this context, dinars and dirhams, even when issued by the same mint at the same time, were as much two separate currencies as are pounds and dollars today. The operation of Gresham's law takes on quite a different character in such a situation, and such terms as "gold standard" or "bimetallism" become virtually meaningless.

Two books by Ashtor collect a mass of data on the monetary history of the Near East, his *Prix et salaires* (1969) and *Les metaux précieux* (1971); on the latter, cf. Hennequin (1974). Goiten's *Medieval Society* shows in concrete detail how gold was used in one medieval Muslim society, especially I, pp. 229-266. It seems that much of the work that has been done on the monetary history of the Muslim world is concentrated on Egypt and its Mediterranean neighbors; the eastern Islamic countries have been more neglected, perhaps because of a relative paucity of data.

**PERIODICAL ABBREVIATIONS**

ANSM  American Numismatic Society Museum Notes
Boom Bulletin des Etudes Orientales
BIE Bulletin de l'Institut d'Egypte
BSOA Bulletin of the School of Oriental and African Studies
JAOs Journal of the American Oriental Society
JESHO Journal of the Economic and Social History of the Orient
JNES Journal of Near Eastern Studies
JNSI Journal of the Numismatic Society of India
MNZ Münstereich numismatische Zeitung [in Holger Dombrowski, Münzhandlung Lagerkatalog]
NC Numismatic Chronicle
RN Revue Numismatique

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4. Specialized Studies in Islamic Numismatics*

This last part of a survey of the state of research on Islamic coins and money is intended as a guide for the non-specialist historian to catalogues and studies of the issues of individual dynasties, regions and periods. Within broad chronological periods (ca. A.D. 632-750, 750-946, 946-1250, 1250-1517, 1517-1900) the treatment is regional. The body of numismatic literature is vast and scattered; this survey attempts to cite only general references and the most recent work for each subject. It must be said, however, that few topics have as yet been adequately treated in the secondary literature. Especially when important conclusions are to be drawn, it is essential to look also at the original sources—the coins themselves.

The Rashidun and Umayyad Caliphates

This formative era for Islamic coinage, which one may call "Umayyad" for convenience despite numerous non-Umayyad issues, has received more attention from modern scholars than any other. The evolution of its coinage, however, is still not clearly understood. The basic references are the magisterial British Museum catalogues of Walker (1941,1956), covering everything but the late Eastern revolutionary issues. The catalogues describe examples from other collections where the B.M. cabinet was lacking, making them in effect a corpus of Umayyad coinage. On the other hand, there is a complete lack of historical principle in the arrangement of the material, which can be very misleading; much has been discovered since Walker wrote; and there are (inevitably) some typographical and other errors. In sum, one may stand in awe of Walker's achievement, but one ought not to use the books uncritically. A more recent general view of Umayyad coinage is offered by Bates (forthcoming 1979).

No other general works have appeared since Walker wrote. Important new museum catalogues include those of Fahmy (1935) and the Artuks (1971), For monetary history, see Grierson (1958) and Ehrenkreutz (1959); the latter provides gold fineness data which should be compared to those in the addendum to Balaguer's article forthcoming in ANSMN (1979). An attempt to estimate the quantity of Umayyad mint production by a seminar at the University of Michigan (1966) is commendable in its intention, but of little practical value because it deals with all mints together rather than the combined output of individual mints. The main historical sources for the origins of Islamic coinage are al-Baladhuri and al-Maqrizi, recently re-edited by Eustache (1968, 1969). Extensive and detailed indices of Umayyad coins and bibliography are available for consultation at the ANS.

* Parts 1, 2 and 3 appeared in previous issues of MESA Bulletin.

** In numismatic parlance a "catalogue" describes the holdings of one collection; a "corpus" attempts to list and describe the issues of a series, with citation of all known specimens.
Umayyad Syria has special interest as the metropolitan province, and especially as the venue of the invention of true Islamic coinage. The basic reference is still Walker (1956), passim (some Damascus silver issues are in Vol. 1, 1941), but his notions of the early evolution of Syrian coinage have been much revised by new evidence and new ideas. It is agreed that the progression in all metals was from imitations of Byzantine and Sasanian coinage, to attempt to create a Muslim pictorial iconography (including the "standing caliph" type), to the initiation of purely inscriptive Islamic coinage in 77/697. The disagreements have to do with the absolute chronology of this evolution and the motivations for it. For the gold dinar, the best account is that of Miles (1967), where previous work is cited. On the transition in silver Miles is also the authority (1952, and his review of Walker’s catalogues, Ars Orientalis, 1959). The most radical revision is that proposed for the so-called Arab-Byzantine Syrian copper coinage by Bates (1976), who argues that it began not in the period of the conquests, the 630s, but rather in the reign of 'Abd al-Malik, and that Islamic Syria had no coinage of its own before that time.

The absolute and relative chronology of the many Syrian copper issues, and (often) their attribution to specific mints, remain the major problem of Umayyad Syrian numismatics. Solutions are likely to be found only by a unified study of the Byzantine and inscriptive types, using such evidence as die linkages, hoards and single finds, metrology, and metal composition. Virtually nothing has yet been done along these lines. The post-reform gold and silver coinage of Damascus is monotonous in appearance, but nevertheless presents some topics for study:

- the evolution of epigraphical style
- trace element composition
- production volume
- mint organization

Careful die studies of dinars and dirhams would be a useful first step. The latest version of a study of "secret points" on Damascus gold and silver by Bates will appear in the Proceedings of the 1979 International Numismatic Congress.

Our picture of the monetary situation in Arabia has changed fundamentally since Walker wrote, largely thanks to the growing interest in numismatics in Saudi Arabia. The major mint there seems to have been al-Kadina, according to Shamma (forthcoming). A very good Ph.D. thesis by Hakiem offers a full treatment of the monetary situation in Arabia in the first century, with implications for Umayyad coinage in general. His detailed listing of Arabian hoards and their contents includes a coin attributed to Umayyad Mecca, and other surprises.

If the Byzantine issues of Syria are not so early as the conquest, then Egypt appears to have the first Muslim coins; there is reason to believe that the Byzantine mint of Alexandria was kept in operation by the Arabs from the time of its capture in 641. Walker barely noted the existence of the imitations struck there, for their Muslim origin was still uncertain. The known varieties are listed by Awad (1972), and the nature of this coinage is discussed by Miles (1958). The latter article is also the standard reference for the Egyptian Arabic copper coinage that replaced the imitations (with additions by Bacharach and Awad, 1974).

Although Umayyad Egypt issued only copper coins, imported gold and silver coins also circulated there, as indicated by the existence of very precise glasses for coins in all three metals. The study of these weights and the related glass weights and glass stamps for measures of capacity is the most interesting field of Umayyad Egyptian numismatics. The largest and most recent catalogue, with a full bibliography, is that by Paul Balog (1976) of his own collection, now in the ANS (the gram weights of the objects in that catalogue, for a variety of reasons, are not reliable). A.H. Morton has begun a new catalogue of the large British Museum collection, including a study of die identifications.

The papyri are another important body of evidence for early Egyptian monetary history. Much information is collected by Grohmann (1954, pp.181-219), but much more could be learned by a scholar with expertise in both numismatics and papyrology.

In the Maghrib, no Muslim coins were issued until the taking of Carthage, about the same time as the introduction of the new Islamized coinage in Syria. As a result, the earliest Maghribi coinage was hybrid, with Byzantine images and Latin inscriptions translating the Arabic religious legends of the reformed coinage. These transitional Maghribi issues, which persisted in North Africa and Spain until about 720, have been a field of study unto themselves. The African issues are well catalogued by Walker (1956), but improvements in his classification are possible. Balaguer (1976) summarizes recent Spanish research on African issues, with most of the bibliography; see Leuthold (1967) for a suggested distinctive Maghribi weight standard for transitional and reformed dinars. Tarizzo (1976) provides a useful brief guide to all Umayyad African issues.

For the Arab-Latin coinage of Spain, Balaguer’s model survey and catalogue (1976) largely replaces Walker and suggests directions for further research, but see also Bates' review (forthcoming in NC). Balaguer’s catalogue of these coins in the ANS is to appear in ANS M (1979). The subsequent reformed issues of Spain were catalogued by Miles (1950), with additions of detail by Walker.

The Umayyad North seems a useful designation for a region comprising the provinces of al-Jazira, al-Mawṣil, Adharbayjān, Arminyya and Arrān, which has not yet been sufficiently recognized either by numismatists or historians as an entity comparable to the Umayyad East, unified under a single governor (after ca. 75 H). The Umayyad issues of Armenia, Adharbayjān and Georgia are listed in the surveys of these provinces by (respectively) Mushegian (1973), Pakhomov (1959-63), and Lang (1955); and the copper issues of Mosul are described by Rotter (1974). Additions could be made to all these listings, but more importantly, interpretation is impossible when each province is considered in isolation. For example, although there are numerous mint names on the dirhams of this region, it appears that there was only one mint for silver at any given time; it was moved from place to place with the governor.

For some 40 years after the conquest of the Sasanian empire, the Muslim governors of the Umayyad East issued coins distinguishable from their Sasanian prototype primarily by the addition of brief Arabic marginal legends. Walker (1941) provides the only general descriptive catalogue of this complex and fascinating "Arab-Sasanian" coinage. In the light of subsequent research and discovery, his work is severely dated. This series has been recently surveyed by Gaube...
in a handbook which, despite some weaknesses, entirely replaces Walker's introductory discussion. The Arab issues must be studied in connection with those of the Sasanians; Gābḷi's handbook (1968,1971) is the most recent survey.

The major interest of scholarship in this field so far is the interpretation of the dates on these coins and the identification of the often cryptic mint abbreviations. Given the many questions that remain to be solved, it is not surprising that neither Walker nor Gābḷi attempted a general historical overview of this coinage. Nevertheless, most of the major mint abbreviations have been identified, and our knowledge of this series has reached a point where generalization is not only possible but essential for further substantial progress. Neither the beginning nor the ending of this coinage has yet been clearly elucidated, nor have such broad problems as weight standards, distribution of production, the relation of governors' names on the coins to the region's administrative structure, and the significance of the various religious slogans been taken up. A fairly substantial body of data on metal composition has been built up by Adon Gordus at the University of Michigan, but is largely unpublished; the most interesting aspect of these data is the use of trace elements to identify the location of mints, as described by him in 1974 (where his earlier publications are cited).

The Arabic dirhams of the East after 79/699 are catalogued by Walker (1956). Important subsequent works include two large hoards described by Artuk (1966) and al-Ūsh (1972), and the catalogue of the Iraq Museum collection by al-Naqshbandi and al-Bakri (1974) with much useful ancillary matter. Many new mint names and new dates for known mints have been discovered since 1956; a detailed file of published and unpublished examples is maintained at the ANS. The reformed dirhams have the advantage, as compared to the Abbasid-Sasanian, of bearing (usually) unambiguous dates and mint names, but their anonymity and standardized inscriptions promise little historical evidence. Nevertheless, DeShazo (1974) has discovered one way that historical information can be extracted from these tæcturn issues, by collation of changes in their ornamentation. Metrology, fineness, and volume and distribution of production are subjects almost untouched.

Traditionally the Umayyad East has been regarded as a region of silver coinage, but coppers actually are plentiful also. Raoul Curiel, until recently curator of Islamic coins at the Bibliothèque Nationale, built up a substantial collection of Umayyad Iranian coppers there and is preparing a corpus of these issues. The coppers with Arabic inscriptions only will not, however, be included; they are quite diverse and of great interest for administrative and religious history.

The issues of the various anti-Umayyad movements of the 5th decade of the 8th century were formerly lumped together as "Abbasid revolutionary" and catalogued with the ʿAbbāsid, although they include issues of such opponents of the ʿAbbāsid as ʿAbd Allah b. Muḥammad and the Khājitān. Now Wurtzel (1978) has brought together this entire body of numismatic evidence and studied it carefully in its historical context.

The ʿAbbāsid Caliphate and its Contemporaries, 750-945

There is no recent corpus or survey of the coinage of the ʿAbbāsid caliphs in their period of temporal sovereignty, but Nicholas Lowick of the British Museum is hard at work to fill the gap with a continuation in several volumes of the catalogue series begun by Walker. Like the earlier volumes, Lowick's catalogue will include examples from other collections of issues not represented in the B.M. The last attempt to list all known ʿAbbāsid issues was the corpus of Tiesenhausen (1973). This work is now hard to find; but if available, it is still a great help. It is well-indexed and generally reliable, although it is a good idea to check the sources cited whenever possible. Two brief surveys of ʿAbbāsid coinage may be mentioned:

- Ghanima (1953) is valid in general, but often misleading in detail.

- Album (1977) proposes a useful periodization.

For research, until Lowick's catalogues are published, it is still necessary to build up one's own corpus from the catalogues of the major institutional collections in London, Paris, Berlin, Istanbul, Leinigrad, Cairo, and elsewhere (listed in MESA Bulletin, May 1978, pp. 8-12); and from the vast literature of articles and monographs. Zambursch's Munzprägungen and the mint file at the ANS are nearly essential for this sort of endeavor. A special category of ʿAbbāsid and post-ʿAbbāsid coins, the presentation pieces made for court donations rather than general circulation, is the subject of a general study by Lutz Illisch, now in progress, which will include both those with and those without images.

Most general work on the ʿAbbāsid period has dealt with coins of one metal only. Miles (1948) and Naqshbandi (1953) describe the gold dinars of the ANS and the Iraq Museum. There seem to be few gold hoards from the ʿAbbāsid period, but later hoards with important representations of ʿAbbāsid dinars include the Khīṭrīyās (Baghdad) hoard, now in Istanbul (Naqshbandi, 1954), and the Ramla hoard (Mitchell and Levy, 1965). Ehrenkruetz (1959) provides data on the gold content of a large number of ʿAbbāsid and contemporary dinars, and offers the interesting speculation that dinars with no mint name might be assigned to Egypt or to Iraq on the basis of a 2% difference in fineness. On the other hand, Jungfleisch (1945-46) attempted to assign them to mints according to the secret points that occur under certain letters on some of them. The attribution problem they attacked is a valid one, but will probably be solved only by a general die study of early ʿAbbāsid dinars; this remains to be begun.

Hoards of ʿAbbāsid era dirhams are common and add much material to that in museum catalogues. Among major Near Eastern finds are those of Susa (Miles, 1960), Denizbaşı (Artuk, 1966), Zakho (Naqshbandi, 1949-52), and Isfahan (Lowick, 1975); the commentaries by Miles and Lowick have general value for the evolution of ʿAbbāsid silver coinage. The Viking era hoards of Europe are important for their Islamic dirhams from the 8th to the early 11th centuries. For the bibliography, see Malter et al. (1975 ff.) for Scandinavia, Kmic-łowicz (1960,1969) for Poland and Eastern Europe, and Noonan (1978) for the Soviet Union. A series of articles in Sumar (1962-67) and al-Masʿūlid (1974 ff.) describe the ʿAbbāsid dirhams in the Iraq Museum. A nearly complete thesis by Nicol (1979) will deal primarily with dirhams up to 218 H, tracing the issues of the provinces Iraq (except Baghdad), Armenia-Araran, Jibal and Khurṣan. For publication he intends to add Egypt, Syria, Kirman and Sijistan—in other words, the bulk of ʿAbbāsid issues in that period. Weight standards of the
Abbasid dirhams have not yet been studied in detail, but useful general data are provided by Miles and Lowick in the hoard publications just mentioned, as well as by Miles in AnNum (1960). The silver fineness of a large number of Abbasid dirhams has been determined by a group of Polish scholars (most recently, see Stós-Fertner et al., 1977).

The very localized copper coinage of the Abbasid era would be difficult to discuss in general terms, but on the sudden widespread disappearance of copper issues in the 9th century, see Miles (1959, pp. 4-5) and Udovitch (EI^2, s.v. "fals").

Turning to more specialized studies, there is a useful survey of the mints of Abbasid Iraq by Kirkman (1945), but up to 218 H it is probably outdated by two recent essays: by Dafar (1979) on the mint Madinat al-Salām (Baghdad), and by Nicol (1979) on the other mints. Other Abbasid mints with special studies include Vasić (Velin, 1955-56), Surra-μan (Samarrā, Miles, 1955), and Kūfa (Ilusaynī, 1970). The coinage of the Šanḍār rebellion is listed by Miles ("Susā," p. 133), with some additions by Velin ("Vasić," pp. 136-37), but new varieties have since been discovered. Bikhāzī (1974) discusses the effects on Baghdad's coinage of the struggle for power in the immediate pre-Byzantine period.

The coinage of Abbasid and post-Abbasid Iran has recently been surveyed by Miles, in Cambridge History of Iran (IV, Ch. 10, 1975). He provides a good bibliography. In addition, a few of the authors of the historical chapters of the same volume saw fit to include the relevant numismatic works in their bibliographies.

The diversity of Iranian coinage in the Abbasid period mandates provincial and regional studies. Most of those done so far have been organized on dynastic lines, or deal only with one special series to the exclusion of other issues of a place. For southern Iran, Lowick's important article (1974) shows the significance of new coin discoveries as evidence for commercial relations, up to the 15th century. The first Saffārīd dynasty in Fārs, Kirkman and Sījistān have been treated by Vāsmīr (1930) and Walker (1936); for some reason, many new Saffārid issues have appeared in the trade recently.

Much work has been done on the diverse coinages of Khurāsān and Mawārīn al-nahr especially in the Soviet Union, but there is still no accessible general guide. The "Bukhara-khuda" coinage of the first Abbasid century, in the Sasanian/Hephthalite tradition, is catalogued by Walker (1941) and dealt with by Frye (1949 ff.), by Smirnova (1963); and in two important articles by Fedorov (1971, 1972). Smirnova's book also treats in detail the 8th-century Sogdian issues of Transoxiana, some transitional issues, and the earliest Islamic coppers of the region, of which all are little known in Western collections. The latest work on these is the dissertation of Smirnova's student Evgeni Tarichan, most accessible in a 1974 condensation. The Taḥirīd issues of this region and elsewhere were last listed by Zambaur (1905, pp. 119-142). The coinage of the Sāmānids, in the 9th century as well as later, is fairly well documented, but in a scattered literature, with no general compendium. The two major sources of knowledge for the region's money from the 9th to the 11th centuries are, for dirhams, the Viking hoards—for the flow of silver seems to have left the Islamic world from these easternmost provinces—and archeological finds in Soviet Central Asia, for which see the bibliographies by Severova in Münzzeit. i epigraphika 2, 3 and 9 (up to 1965). A general survey of the 8th century Sāmānīd issues by Hattori, although in Japanese, has a full bibliography, tables and notes in Roman script (1975). On the BanīJūrūd (Abū Da'imūd), see Bacharach (1976).

The independent Sasanian-type coinage of the Isphahbads of Tabaristan, which continued into the Abbasid period, was last studied in full by Unvalla (1938). His catalogue remains valuable also for the similar coins of the Abbasid governors after the conquest. These are treated also in the standard works on Umayyad Arab-Sasanian coinage, but an important note by Ilsich (1973) solves some of the perplexing chronological problems of that series. Then, for the rest of the Abbasid period and until 499 H, Stern's mint history of Amūl (1967) collects almost all the necessary information, including detailed consideration of the issues of the Zanj rebellion. For southern Iraq, the references cited in that section for copper coins, glass weights, and the papyrological evidence are equally useful for the rest of the 8th century. The introduction of minting of gold and silver coins (under al-Mahdī and al-Rashīd) is discussed in a later paper by Miles, unpublishable in its present form, but available for reference at the ANS. Otherwise, Abbasid Egyptian dinars and dirhams are mostly unstudied as such. The Tulūnīd interval, on the other hand, is well covered by Grabar's 1957 corpus. Since then Ehrenreutz has begun the die study of Tulūnīd dinars (1977).

Abbasid Syria has been insufficiently studied. Nassar (1948) provides an incomplete listing of issues of Palestine; Shamma (1971) is more complete, but for the Tulūnīd period only. Miles' excavation reports on Tarsus (1956) and Antioch (1948) are very important for Syrian copper issues. Islamic coinage in Yemen does not begin until the early Abbasid period. Bikhāzī's article (1970) collects all known issues, with extensive historical commentary. In most respects the Abbasid monetary system of Egypt continued that of the Umayyads, and the references cited in that section for copper coins, glass weights, and the papyrological evidence are equally useful for the rest of the 8th century. The introduction of minting of gold and silver coins (under al-Mahdī and al-Rashīd) is discussed in a later paper by Miles, unpublishable in its present form, but available for reference at the ANS. Otherwise, Abbasid Egyptian dinars and dirhams are mostly unstudied as such. The Tulūnīd interval, on the other hand, is well covered by Grabar's 1957 corpus. Since then Ehrenreutz has begun the die study of Tulūnīd dinars (1977).

Abbasid ʿIrāqīyya is treated in the general surveys of the province by Tarizzo and (presumably) ʿAbd al-Wahhāb (1968); the latter is seemingly difficult to obtain, either in the form of the original Arabic monograph with a "catalogue" (of what?) appended, or the French translation of the Long Introduction that appeared in the Bulletin of the Central Bank of Tunisia (1968-70; see NL 87-311, 89-339). The dirham coinage of that province is unstudied as such, but it seems to have been exported to the Muslim East in quantity, and, thus, to have entered the silver flow to Europe. It bulks large in almost all 8th and 9th-century silver hoards from both regions (see especially Naqqashbānī, 1949-52). Coppens of that region are described by Eustache (1966). For the Aghlabids, Muhammad al-Ush has prepared a corpus, still unpublished. The London, Paris and Berlin Museums have catalogued their Aghlabid material, and the im-
The Regional Dynasties, 945-1250

It is difficult to think of an appropriate general designation for this era, for in it the regions of the Muslim world began more and more to go their own way in coinage, both in coin design and in monetary standards. The major phenomenon of widespread importance is the "silver famine," the debasement or cessation of silver coinage, which seems to have affected almost all the Muslim lands in the 9th and 10th centuries. A host of articles and monographs have attempted to explain this lack of fine silver coinage by a scarcity of silver metal, brought about by massive flows of the metal to western Europe and India, where silver was the primary coinage metal at that time. Among the most recent discussions in this vein are those of Watson (1968) and Ashit (1971), but see also Hennequin (1972,1975).

But was there, in fact, a shortage of silver? Cahen, in a 1974 paper (still in press), has noted for Fatimid Egypt, at least, that the literary and documentary sources often mention payments in silver coins as a routine feature of economic life. He suggests that the rarity of Fatimid Egyptian silver in museum catalogues may be explained by lack of collecting interest in these unattractive issues, not by scarcity of silver coinage at that time. His point is well taken. In fact, Fatimid silver coins are by no means so rare as the catalogues suggest, and are found in abundance at the site of medieval Fustat. Whether this holds true for other parts of the Muslim world remains to be seen.

It must be said frankly that sloppy thinking has characterized much of the discussion on this topic, including my own. I cannot resist quoting Hennequin (1974, p. 6, n. 3), who, at the time he wrote, was a secondary school economics teacher. He explores "Le temps perdu et les efforts gaspillés par tant d'auteurs dont la science des langues mortes ou orientales impressionne, mais dont la compétence économique—surtout en ce qui concerne les problèmes monétaires—n'atteint pas le minimum exigé de nos élèves de Première B [11th grade]." One doubts that any of us will attain the level of Hennequin's enviable study, but it is certain that study of medieval monetary history must with a firm grasp of the theoretical considerations set forth by Hennequin in his various articles, as well as a more careful and precise treatment of the evidence than has so far been seen.

The question of scarcity of silver is likely to be settled only by comparative study of the relative market values of gold and silver in each Muslim country over the years. The basic data for such a study are fairly abundant, in the form of dinar/dirham exchange rates mentioned in literary sources and documents; but such references are useless unless one knows the fineness and weight standard of both currencies. With the latter information in hand, the exchange rates for actual dirhams and dinars can be turned into comparable index rates for theoretical standard dirhams and dinars of pure metal, and these into value ratios for equal weight units of the two metals. This work has not yet been done, nor are there yet much reliable data for the fineness and weight standards of 10th to 13th-century Islamic coins (or those of any other period). The presentations of such data so far have been marred by a tendency to generalize results for an entire dynasty, ignoring variations in time and place. Ehrenkreutz (JAOS, 1954, 1956; JESHO, 1963) provides a mass of data for the fineness of dinars of the period, but more is needed.

As for silver, only a large handful of Fatimid and Ayyubid dirhams has been analyzed by Balog (1961); the data he gives are not dated except by reign, nor is any distinction made between Syrian, Egyptian and North African issues. Metrological data for Egyptian dynasties only are presented by Ehrenkreutz for dinars (1956) and Balog for dirhams (1961), but this work must be done over, using weights determined on modern balances—the older catalogues are unreliable—and more sophisticated statistical techniques. The metrological evidence of coin weights, bronze and glass, may well be more informative than that of the coins, since coins were often struck without careful attention to standards.

Turning to more specifically numismatic studies, one may well begin with the East, where the classical tradition introduced by Ābd al-Malik was perpetuated longest. For Iraq and western Iran a full-scale study and corpus of the coinage of the Buyids by Roy Matta-hedeh has been long in progress; its delay is regrettable, for there is no substitute general reference. A general sketch of Buyid coinage, provided by Miles in the Cambridge History of Iran, Volume IV, is generally useful for all Iran up to the mid-11th century. The most recent specialized studies result from two ANS Summer Seminar papers: Whitcomb's study of a hoard from Fars (1976) and Carol Bier's discussion of the appearance of a die-cutter's name on coins of Buyid Ibal (forthcoming, ANSMN, 24), but his bibliography, is also the only general guide to the coinage of the various minor dynasties associated with the Buyids.

The coinage of the Great Seljuks, including those of eastern Iran, is collected in a corpus by Alptekin (1971), which covers the older material well, but omits much unpublished material. The coin descriptions are not always reliable, according to someone who has re-examined many of the coins. Among recent works not available to Alptekin, the most general is Lowick (1970). There is a scattering of very limited studies, but for the most part, the dynasty, its branches,
ins (rare in this period) with figural types, ascribed to the Seljuks in Syria in the late 11th century.

These latter issues may have been one precursor of a remarkable coinage struck by various dynasties in al-Jazira, Anatolia and the Caucasus in the 12th and 13th centuries: large copper pieces, conspicuous for the images that frequently appear on them, are drawn from a variety of ancient and medieval sources. The first to strike such coins were the Danushmandids, whose issues are catalogued and put in chronological order by Whelan (ANSMN, forthcoming). Other dynasties that issued similar pieces were the Artuqids (Lane-Poole, 1875), the Zengids (al-Jasayf, 1966), the Ayyubids, the Seljuk kings of Rum, and a number of minor princes, as well as the Christian kings of Armenia and Georgia. Whelan’s thesis (1979) may well be, for some time, the last word on these issues from the art historical viewpoint, but their monetary significance remains to be clarified.

These coppers were by no means the only coinage of Syria, al-Jazira and Anatolia in the 12th to 13th centuries, but few general studies can be cited. Album’s dynastic bibliographies (1977) list some of the more important partial catalogues. A corpus of Rum Seljuk coinage by Robert Gurmet was left unfinished at his death last year; its fate is unknown. Kouymjian (1969) covers the Ildegzids, Shirvanshahs, and associated rulers. A fine discussion of Artuqid silver coinage is provided by Ilisch (1973), whose thesis, in progress, deals with later (post-Mongol) Artuqid issues. The coins of Christian Armenia and Georgia show much Islamic influence or, to put it another way, often are Islamic coins in all but the ruler’s name. The basic references for them are, respectively, Bedoukian (1962) and Lang (1955). Bedoukian has more recently studied the hybrid Armenian/Rum Seljuk issues (1978).

The coinage of the Crusaders is part of Syrian monetary history. A forthcoming general survey of all Crusader coinage, edited by Selzman, will include chapters by Metcalf and Bates on the Crusader imitations of Muslim coins in gold and silver. These same authors are committed to write the chapter on imitations for the History of the Crusades, Volume VI, edited by Setton. The study by Balog and Yvon (1958) remains the standard descriptive reference.

The coinage of Yemen to 569 H is catalogued by Bikhazi (1970). More recently, see Shamma (1971) on the 10th century, Bates (1972) on the Isma’ili issues of the 11th to 12th centuries, and Lowick (1976), where Najahid coins of Zabid are recognized for the first time. The most recent publication of Ayyubid Yemeni coins is by Balog (1960), while Stern (1949) treats the Zaydi issues of the same period.

More evidence on monetary history is available for 10th to 13th-century Egypt than for any other part of the world before modern times. It includes:

- information in contemporary and later historical works;
- large quantities of glass and bronze coin weights;
- a mass of everyday business documents on papyrus and paper, either from the soil or from the Cairo Geniza; and
- the coins themselves, which are abundant.

Much has been written by specialists in each of these bodies of evi-
dence, but there is unfortunately still no coherent description of the monetary system, and misconceptions abound. For Ikhshidid coins Balog (1959) listed all the issues then known. Since then Bacharach has been the most active student, most recently with a study of the earliest Ikhshidid dirhams (1975, with Shamma), and a general survey of the coin evidence (written 1976, in press). He is preparing a new corpus of that dynasty's issues. A very recent paper by Eber Kreutz, presumably to be published, discusses the production level: fineness and metrology of Ikhshidid gold.

There is no general compilation of Fatimid coinage. Miles' catalogue of the ANS holdings (1951) is a handy reference, with a full bibliography and a list of the mints and dates recorded at that time. For the silver, Balog (1961) lists known specimens, citing his earlier descriptive articles. Much information on the mint and monetary system will be found in Rabie (1972) and Goitein's A Mediterranean Society (1967-), the importance of which cannot be overemphasized. Her nequin's articles, especially that of 1974, are also essential. A corpus of the numerous and varied Fatimid glass coin weights has been published by Balog (1971-73), who calls them "jetons" and argues that they were used as token currency. An article by Bates (forthcoming) attempts to refute this idea and offers suggestions about the actual nature of the Fatimid currency system. Balog has also identified Fatimid bronze coin weights (1970, 1973). For the papyrological evidence, see Grohmann (1954). Ehrenkreutz's studies on the metrology and fineness of Fatimid dinars are cited at the beginning of this section.

Balog's massive corpus of the Ayyubid coinage of Egypt and Syria is moving toward publication, For monetary history, the works of Rabie, Goitein and Henequin are equally useful for the Ayyubid period. From that era there survive three valuable descriptions of the Egyptian mints, cited in Part 3 of this survey (MESA Bulletin, Dec. 1978, p. 12). Ayyubid glass coin weights were catalogued by Balog in 1966, he has also recently identified the copper coinage of al-Kamil, previously unrecognized (1977).

The coinage of the Maghrib under the Fatimids is covered in the general works on that dynasty and by Tarizzo (1977). A corpus by Hazard begins with the first post-Fatimid issues of the 11th century and catalogues all North African coins down to the Ottoman conquest in the 16th century. It also includes Spanish issues of North African dynasties. For the Spanish dynasties, there is Miles' corpus of the Almohad rulers (1950), and then his catalogue of ANS holdings of the 11th century Muwilâk al-Tawâif (1954); but for the latter, Prieto (1926) is the more complete reference. For other Spanish issues, the old catalogue of Vives (1843) is still the best available reference.

Islamic coins from A.D. 1250 onward will be treated in the final installment of this survey.

**Abbreviations**

ANSMN American Numismatic Society Museum Notes
ANSNN&M American Numismatic Society Numismatic Notes & Monographs
JAOE Journal of the American Oriental Society
JESHO Journal of the Economic and Social History of the Orient

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The Mongol conquest of the IRANIAN EAST put an end to the classical Islamic coinage introduced by ʿAbd al-Malik. At first, considerable local diversity existed under the early Mongols and Ilkhanids, but Ghazan and Rashid al-Din imposed a uniform monetary system on the many Ilkhanid mints, setting the pattern for eastern coinage for several hundred years. For this long period, it is easiest to treat separately Western Iran, Eastern Iran, the Steppes, and Anatolia, despite the many interrelationships of their coinages.

Beginning with WESTERN IRAN, there is no general corpus or survey of the very complex coinage of the Mongols and Ilkhanids, but Lane-Poole's sixth volume of the British Museum catalogue, with its introduction, makes a good starting point. Other important catalogues for this dynasty, listed in Part 1 of this survey, include those of the Hermitage (Markov) and Istanbul (Mubarak, Artuk). The Ilkhanid holdings of the Iraq Museum are catalogued by al-Bakri in Siffner (1966, 1967, 1969, 1970, 1971) and in al-Maskukat (1972).

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*The first installment of Part 4 of this survey appeared in the MESA Bulletin XIII, No. 1 (July 1979). Parts 1, 2 and 3 appeared in previous issues of the MESA Bulletin.
For YEMEN, to the south, there has been little work on the Rashidids (1229-1454 AD) since the articles of Prideaux (1833) and Nitzel (1892). It is not known if the succeeding dynasty, the Tahirids, issued coins.

Muslim coins began to be struck in EAST AFRICA, at Mogadishu and Kilwa, in the 12th or 13th century. Since there is little historical literature from that region, the coins promise special value as evidence, but they are rather crudely struck, so that their attributions are often controversial. The latest contribution to the debate is a review article by Freeman-Grenville (1978), who cites the previous literature.

Hazard's corpus (1952) is the standard reference for all NORTH AFRICAN dynasties down to the Ottoman conquest; see ANSÄNZ 12 (1966) for his additions and corrections. On the Nağrids of SPAIN, Vives (1893) is still the most complete catalogue. Rivero (1933) gives a brief résumé.

**Modern Times**

Although a monetary survey of the Islamic Middle East, from the 16th century to the introduction of mint machinery in the 19th, is facilitated by treating the two large empires, Ottoman Turkey and Iran, as if they were numismatic units, it has to be acknowledged that the coinage of each is very complicated and diverse—a field of numismatic scholarship in itself. All that can be done here is to indicate the main general references for the two empires and for the contemporary peripheral areas.

Beginning again in the east, Lowick (1966) has provided an excellent survey and corpus of the coinage of the Shaybanids of 16th-century楼Zand 15-21-22, but he was unable to use the copious work of Davidovich, aside from one early article. Her most recent study (AE 1972) cites her earlier work; see also her hoard compilation (1979). Many of her articles are abstracted in NJ 83, 87, 92 and 93. She has also worked extensively on the succeeding dynasty, the Janids of Bukhara in the 17th and 18th centuries, with a 1964 corpus and monetary history, and many hoard studies (1979). There is little of scholarly interest on the 19th-century khanates of CENTRAL ASIA (Mangits of Bukhara, Khugand, Khiwa), except for two interesting articles by Burnasheva:

- In 1966 she wrote on the organization and technique of the Bukhara mint, from Russian travelers' accounts and material remains; and
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To the south the standard descriptive reference for the Durrâns of AFGHANISTAN is Whitehead (1934), and for the Barakzais, King (1895). See also Krause/Mishler, described below.

There are several general catalogues of the coins of the Shahs of IRAN, notably Poole (1887), Rabino (1945, 1950), and Farahbakhsh (1975). There is as yet no corpus or conspectus of issues, except for the reign of Shah Whitehead (1934).

Rabino's work in particular is a mass of disorganized material, but surprisingly interesting because of his extensive quotation of contemporary Western reports. More scholarly studies include Vasseur (1934) and a series of articles by Rappehali, which amount to a Šafavid monetary history (see Abstracts, NL 89:376, 91:310-312). Rakhami (1971) has also written on Šafavid monetary organization.

Much less has been written on the issues of the Shâhs than on those of the Ottomans, which are popular with collectors. Additionally, numismatic research by the Turks began well over a century ago, while the study of the Ottomans has been facilitated by treating the two large empires, the Ottoman and the Safavid, as if they were numismatic unities, it has to be acknowledged that the coinage of each is very complicated and diverse—a field of numismatic scholarship in itself. All that can be done here is to indicate the main general references for the two empires and for the contemporary peripheral areas.

The coinage of the khan's of the CRIMEA has been little studied since Retowski's full catalogue (1901).

Although the Ottomans occupied YEMEN for much of the period since the 16th century, they struck few coins there. On the other hand, the Zaydi Imams, in the 17th to 19th centuries, produced a varied coinage from a number of mints, stylistically influenced by Iranian, Turkish and Indian prototypes. Aside from descriptions of a few examples, this coinage remains to be studied and sorted out.

For the coins of the Sharifs of MOROCCO, from the 17th to the 19th centuries, there are only descriptive catalogues of major Maghribi collections. The collection of Brêthes (1939) is now owned by the...
that standard was reduced by two qinats each time. It is hoped that both papers can be published soon. Finally, Seifeddini (NE 1968) treats Ilkhanid mint organization as described by Rashid al-Din and Abd Allah Iby Kiya-Mazandaran.

For IRAN, between the Ilkhanids and Timurids, a paper by Album (ICSR 1976) is of the greatest importance. He demonstrates the division of Iran into four major monetary regions, the boundaries of which remained largely stable, despite changes in political suzerainty, and tabulates for each region a series of dirham weight-standard reductions. The only other general work for this period is Rabino's 1950 article—a mass of disorganized detail, but useful. For the Jala'irds, Markov (1897) is the last general corpus; one may add the British Museum and Istanbul catalogues and al-Bakri's Iraq Museum catalogue (Smyth 1973). On the monetary system, Seifeddini (1974) is especially important for the Jala'irds, but also for other Adharbayjani dynasties into the 15th century. For the Mazaffarids, Album (1974) is the only recent work of importance; it includes as well a list of known Inchu'id issues. Album's 1977 article on Nur Award of Lur Buzurg (751-757 H) also includes remarks on these dynasties.

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Further out on the Steppes a corpus of the coins of the Golden Horde khanates (also called Blue and White Hordes, Jüjids, Batûtids) has recently been compiled by Ağat (1976). It includes the coins of the older catalogues and several public and private collections in Turkey, but not the extensive recent Soviet literature. For the late-13th to the turn of the 16th Century seen as the high point of the evolution (Abstract, NL 87:327).

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The reign of Naqib Shah of Afghanistan, in particular, is a mass of disorganized detail, but surprisingly interesting because of his extensive quotation of contemporary Western reports. More scholarly studies include Vasmer (1934) and a series of articles by Radhakrishnan, which amount to a systematic study of currency in ancient Mesopotamia (see Abstracts, RC 89:372; 91:310-312). Rahmami (1971) has also written on Safavid monetary organization.

Much less has been written on the issues of the Shahs than on those of the Ottomans, which are popular with collectors. Additionally, numismatic research by the Turks began well over a century ago, while in Iran interest awakened only some 30 years back. Among recent general works on the OTTOMANS, the best for reference is Pere's 1968 catalogue of the YAPI v. Kredi Bankasi collection. The collection itself is large and representative of nearly every Ottoman issue, but the chief virtue of the catalogue is that each coin is illustrated, making it easy to distinguish denominations and varieties. There is some historical discussion. In addition, there is the catalogue by 'Jem Sultan' (William D. Holberton) of his own large collection, with commentary and detailed lists of the date varieties of each issue. Schaendlinger's handbook (1973) has a more scholarly appearance, but does have a fuller bibliography than the two volumes of Artuk's Istanbul catalogue is another valuable recent reference. The coinage of the Sharifs of MOROCCO from the mid-19th century to the introduction of mint machinery in the 19th, is unfortunately very unreliable (see Lowick's review, NC 1975); it is very complicated and diverse—a field of numismatic scholarship in itself. All that can be done here is to indicate the main general references for the two empires and for the central and peripheral areas.

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Aside from descriptions of individual coins, there is little to cite for ANATOLIA in the late 13th and early 14th centuries, either on the issues of the late Rûm Seljuk puppeteers of Ilkhanid governors or on the subsequent regular Ilkhanid coinage. The imitations of late Ilkhanid issues by the various beyliks that emerged as Ilkhanid control weakened are well treated by Album (1976), while Remler (forthcoming in ARMN 25) describes how three of the beyliks (the Eretnids, the Isfendiyâris, and the Ottomans) evolved their own coinage from these imitations. A general survey of the westernmost beyliks, Saru-khânis, Ottomans and others, will appear in the forthcoming publication of the coins of the Sardis excavations (MacKenzie and Bates). Important works on the beyliks, in preparation in Istanbul, include a catalogue of the Yapi ve Kredi Bankâsi collection by Tunkay Aykut, and a joint catalogue of several private collections by Gero Kurkman and Omer Diler. The beginnings of Ottoman coinage are also dealt with in the general works on that dynasty, discussed below.

For EGYPT and SYRIA in this period, the standard reference is Balog's (1964) massive corpus of Mamluk coins which, despite minor errors, is a model large-scale descriptive work. Additions and corrections were compiled by Balog in 1970 (ARMN 16). Important descriptive studies since then include Bates (1977) on the coinage of Bars-bars; Lachman (1972) on a hoard of Barsbây dirhams; and Broome's (1978) tabulation of the varieties of the gold ashrâf ('seqin') from 810 to 922 H. Allan (1970) has contested the heraldic interpretation of the images on certain Mamluk coins, while Balog (1977) continues to defend it.

The monetary history of Mamluk EGYPT has recently received much attention. In addition to the general works of Ashtor, Goitein and Rabie cited for the Fatimids and Ayyubids in the previous installment of this survey, there have been a series of important articles by Bacharach on money in the Circassian period (1382-1517 AD): on gold (1973), silver (1971), and copper (1976). In 1968 Bacharach and Gordus provided copious data on the fineness of Mamluk silver coins; and in 1976 Bacharach dealt with the question of foreign coins and counterfeiting in Mamluk Egypt, including a useful study of the structure of the control of the mint. His 1975 article surveyed the Circassian historical sources for monetary history. Ashtor's special contribution has been his mining of the wealth of data in the Vene-
Banc de Maroc; Farrugia (1939) described the hoard of the Bardo Museum in Tunisia.

The modern machine-struck coins of the Muslim states offer little of scholarly interest, although something might be done with the introduction of mint machinery as an example of the adoption of Western technology by Muslims or, on a wider scale, with the spread of the 19th-century European monetary system into Muslim countries. The introduction of Western techniques brought with it an ideological question: whether to adopt as well Western notions of appropriate coin design (rulers' portraits, etc.) or to maintain the aniconic Islamic tradition. The different answers to this question by the various Muslim states are interesting, although perhaps merely reflective of well-known wider policies: for example, Turkey's coinage is very European in appearance, while Saudi Arabia's, not surprisingly, is very Islamic. In any case, if for nothing else than curiosity, the Standard Catalogue of World Coins, edited by Krause and Mishler, is a first-rate descriptive catalogue for all nations since about 1800. Many Muslim coinages are adequately described for the first time in it. Revised editions appear every two years.

**Abbreviations**

**ACMN** American Numismatic Society Museum Notes.

**ICSR** Islamic Coins in the Service of Research (Colloquium), London, 1976. In the last installment the anticipated publication of the colloquium proceedings was cited several times. Publication of this volume is now in doubt. The papers may be published separately in various journals.

**JESHO** Journal of the Economic and Social History of the Orient.

**KZ** Kostersche Numismatische Zeitung (in Holger Dombrowski München, and W. Schulze, 231). Revised editions appear every two years.

**NC** Numismatica et Numismatica.

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