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NUMISMATICS—AN ANCIENT SCIENCE
A SURVEY OF ITS HISTORY

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NUMISMATICS—AN ANCIENT SCIENCE

A Survey of its History

By *Elvira Eliza Clain-Stefanelli*

INTRODUCTION

This study has been prompted by the author's observation that many people regard numismatics simply as coin collecting, a pleasant hobby for youngsters or retired persons. The holder of such a viewpoint is unaware of the scope and accomplishments of a historical investigation that traces cultural evolution through one of the basic aspects of everyday human life: money. Seen as a reflection of past aspirations and accomplishments, coins are invaluable sources for scholarly research, but few people are aware of the tremendous amount of work done in this field by past generations.

The present monograph is intended to give only a synoptic view of the complex world of numismatic research. An area of knowledge that spans centuries and contains such varying fields as primitive media of exchange, coins, paper money, money substitutes, tokens, medals, and decorations, can hardly be given a detailed history by a single person in a single work.

Even in a survey such as this, before such wealth of material, many omissions are unavoidable, and, since this work is also intended for the non-professional, other omissions have been made to facilitate the presentation. Authors and their works have been carefully chosen to illustrate the main line of progress

within specific areas. Citations of their books and articles are given in shortened form in the footnotes, with full references appearing at the end of the paper. Because coin collections have supplied the raw material for much investigation, the histories of some of the major private and public collections also have been included in this survey.

In my research, I have had an excellent guide in Ernest Babelon's chapter "La numismatique et son histoire," published in 1901 as part of the first volume of his *Traité des monnaies grecques et romaines: Théorie et doctrine*. Material on recent accomplishments has come from reports given by specialists to the international numismatic congresses. But without the helpful assistance received from leading European numismatists on the occasion of my visits to various numismatic museums, this study could not have been completed.

I am indebted to Dr. Nils Ludvig Rasmusson, Director of the Kunglig Myntkabinettet of the Statens Historiska Museum, Stockholm, as well as Professor Willy Schwabacher and Mrs. Ulla S. Linder Welin from the same institution for their kind interest in reading the galleys. Through their suggestions I have been able to benefit from the wide

experience and knowledge which distinguishes these scholars in their fields. Of invaluable assistance in gathering basic information about the actual status of numismatics in different countries were: Prof. Felipe Mateau y Llopis, Director of the Biblioteca de Cataluña, Barcelona; Dr. Paul Grotemeyer, Director of the Staatliche Münzsammlung in Munich; Mr. Jacques Yvon of the Cabinet des Médailles, Paris; Mr. Antonio de Andrade Rebelo, Curator at the Museu Numismatico Portugues, Lisbon; and Prof. Walter Hävernick, Director of the Museum für Hamburgische Geschichte, Hamburg.

My gratitude also is extended to Dr. Otto Mörkholm, Curator of the Kongelige Mønt- og Medaillesamling, Nationalmuseet, Copenhagen, to Mr. I. G. Spasskii, Curator of the Numismatic Department at the

Heritage, transferred to Professor Honoré Bousquet in charge of the Münzkabinett of the Stadt of Winterthur, Switzerland, and to Mlle. Monique Du Verdier from the Bibliothèque Nationale, Paris, for their aid in securing important illustrative material; to Mr. Sawyer M. Mosser, Executive Director of the American Numismatic Society, New York, for many practical suggestions concerning the style of the manuscript, and to Mr. Richard P. Brecken and Mr. Geoffrey H. North, Librarian and Assistant Librarian, respectively, of the American Numismatic Society, New York, for their continual help; to Mr. Isadore Snyderman, New York, for providing translations from the Russian. Finally, without the assistance of my husband, Dr. Vladimir Glain-Stefanelli, this work would have never reached its conclusion.

EVOLUTION OF A SCIENCE

About a hundred and twenty years ago, a historian, Friedrich Creuzer, called numismatics "the enlightenment of archeology." He characterized the coin as "a mirror of the ancient world, which indicates the progress of the arts, which accompanies human society in all its aspects, civic life, laws, institutions, wars, conquests, peace treaties, changes of government, trade, and alliances. It perpetuates the fame of noble generations and it keeps alive the memory of great men."¹

Expressed in the exuberant language of the romantic era, this is the rather vivid description of a discipline which traditionally has been regarded within the strict denotation of its Greek or Latin root—*νομισμα* or *nummus* (coin)—as the science of coins. So terse a definition as the latter, however, suggests little of the origin and scope of an area of research that often is looked upon as a branch of history and archeology. The function of coins as an official product of the issuing authority, as an essential element in trade, as a reliable source of information for historic, linguistic, and epigraphic phenomena, as a subtle interpreter of artistic trends, and, above all, as a clear reflection of many aspects of human society through the ages, usually escapes the layman and even the student. Numismatics, with a record as a scholarly discipline which dates back at least to the 13th century, suffered greatly in prestige because of its earlier methods. Necessarily descriptive at first, it emerged

very slowly as a more interpretative science wherein emphasis on the application of established data became the basis for research of a broader nature.

With English and especially German scholars as the leading theoreticians, numismatics as a science has moved more and more toward a definition which would include the essential problems of origin, scope, method, and application. Such a direction was pointed out in 1921 in a lecture by the German numismatist Behrend Pick.² It has since become the subject for many learned debates among scholars,³ all of whom seem to agree at least in one respect—that numismatics can aspire to scientific honors only if it approaches coins primarily in their historical function as money.⁴

² His lecture, "Die Münzkunde in der Altertumswissenschaft," was presented at a meeting of philologists in Jena, 1921, and published in Gotha, 1922. It was reproduced later in his *Aufsatz zur Numismatik* (1931).

³ JESSI, "Aufgaben und Grenzen der Numismatik" (1921-1926); SCHWIKOWSKI, "Numismatik und Geldwissenschaft" (1929); GIEBEL, *Numismatik und Geldgeschichte* (1949); LOHMEYER, "Numismatik und Geldgeschichte" (1957); GIEBEL, "Von der Numismatik zur Geldgeschichte" (1959).

⁴ The relation between numismatics and history has been discussed in GRIBSON, *Numismatics and History* (1951); BRIGLIA, "Possibilità e limiti del contributo numismatico alla ricerca storica" (1957); SCHUBERT, *Archeol. Numismatics. I. Basic Introduction* (1958); WALLACE, "Greek Coins and Greek History" (1958); JONES, "Numismatics and History" (1956); GEASE, *Roman History from Coins* (1958); BRAUN VON STUMM, "Die Münze als Hilfsmittel der mittelalterlichen Kulturforschung" (1955).

¹ BABYLON, *Traité*, vol. 1, col. 66.

Pick drew a sharp distinction between pure numismatics (*reine Numismatik*) and applied numismatics (*angewandte Numismatik*). Under the first, he confined the simple activities of collecting, classifying, and describing coins—a preoccupation which he rated on a lower scale and which he, therefore, assigned contemptuously to the nonspecialist, the amateur, the collector. On the other hand, applied numismatics, according to him, became the science that permits the scholar to deduce from coin material important conclusions applicable to the related fields of social, political, and economic history, and art and philology. This latter approach he reserved for the scholar, the highly trained specialist.

This attempt to define numismatic science failed completely. Within a few years Wilhelm Jesse contested these ideas by pointing out that very often even purely descriptive activities require the knowledge of a highly trained person.⁵ To disregard coin catalogs would be similar to a historian's ignoring a collection of published documents. The qualitative difference between an inferior listing of coins and a highly specialized publication of numismatic material rests upon the approach and methods used. Moreover, Jesse contended, applied numismatics cannot be considered an independent science since it results from a blend of other disciplines.

Starting from these premises, Jesse proceeded to state his own definition of numismatics as a science. Since coins were created for the practical purpose of serving as a medium of exchange, it seemed logical that their research should begin at this point. Thus, Jesse argued, the search into the history of *all* past forms of money—attempting to explain their origin, their evolution, their extrinsic appearance as well as their intrinsic qualities, their relation to economics, to social and to cultural history—is the real scope of numismatics as a scientific and historical discipline.

While some scholars were involved in theoretical discussions of this theme, others tried to give it a practical application. For example, in the Vienna coin cabinet, August von Loehr built the collections and exhibits according to such a historical concept of money, beginning with primitive media of exchange and bringing the exhibits up to the present complex period of financial documents; and in the United States, exhibits recently arranged at the Smithsonian Institution emphasize similar ideas (fig. 1).

⁵ "Aufgaben und Grenzen der Numismatik" (1924-1926), pp. 3-5.

Beyond the basic requirements of accurate description and allocation within a geographical and historical framework, other factors, which involve history, law, economics, art, philology, religion, and even philosophy, must be taken into consideration. A complementary science to all these disciplines, numismatics in turn utilizes them also in its own research. With this reappraisal, the field of numismatics has expanded considerably, increasing the knowledge requirements for every numismatist.⁶ The scholar has to exchange the delightful pastimes of the antiquarian and hobbyist, the *Liebhaber* of the past, for the more exacting work of the scientist who must possess an almost encyclopedic knowledge. Specialization within a determined field or period, as a result, seems the only workable solution.

When he approaches the economic function of coins as money, the researcher today sees many new factors entering his field of vision. Following this predominant school of thought, numismatics should broaden its scope from a science restricted to coins or metallic currency, *l'archéologie de la monnaie métallique*,⁷ to a science of all forms of money—including primitive media of exchange, necessity money, money substitutes, and documents of value.

Although primitive media of exchange generally are considered to be within the province of anthropology, recent numismatic theories concerned with a philosophic explanation of the origin of money have resorted to the forms of value and exchange used by early or contemporary primitives. Examples of such theories are Bernhard Laum's *Heiliges Geld: Eine historische Untersuchung über den sakralen Ursprung des Geldes* (1924), which explains the origin of money as an expression of primitive cult forms and not as a phenomenon produced by economic factors; and Wilhelm Gerloff's *Die Entstehung des Geldes und die Anfänge des Geldwesens* (1947), which emphasizes sociological factors as the explanation for the origin of money.

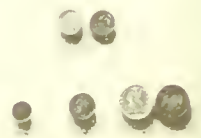
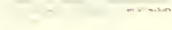
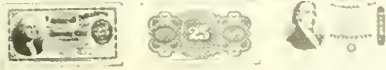
As seen in the history of monetary values, in the history of prices and wages, and in the evolution of national economies with their ensuing theories, there is an implicit connection between numismatics and

⁶ See HAFVERNICK, "Cooperation": Some Thoughts and Suggestions for the Intensification of Numismatic Research" (1958).

⁷ GILDER, "Rapport sur la numismatique moderne," p. 104.

RISE OF MODERN AMERICA, 1873-1900

This period of economic expansion was a virtual gold era. The issuance of silver and gold coins under the National Bank Act of 1863, and the introduction of fractional currency into circulation. Coinage of both gold and silver during this time and new issues of fractional paper currency were also.



MINERS

SILVER CERTIFICATE
Notes redeemable in silver were issued under the Act of 1876 and 1890.



UNITED STATES
Banking system in the United States. Under the National Bank Act of 1863, the Federal Reserve Act of 1913, and the Federal Reserve Act of 1914, the Federal Reserve System was established.



FEDERAL RESERVE NOTE

Entered into circulation in 1913, the Federal Reserve Note is a unique product of modern banking. It is the only note in the United States that is not redeemable in gold or silver.



TREASURY NOTE

Through increased mining, the price of silver continued to drop. In an effort to maintain the value of silver in parity with gold, the Sherman Silver Purchase Act of 1890 authorized additional purchases of silver with treasury notes, redeemable in either silver or gold.



SENT PIECE

A new 5-cent piece with a Liberty head designed by C. C. Barber was issued in 1858.



GOLD CERTIFICATE

Issued for general circulation in 1882, these notes were secured by gold deposits.



NEW CURRENCY

Designs showing Barber's Liberty head design were introduced in 1892.



Fig. 1.—COIN EXHIBIT in the Smithsonian Institution, illustrating numismatics as the history of money (Div. of Numismatics photo).

economics.⁸ On the other hand, considerations of a broader nature—the causal relations between money

⁸ For bibliographical information, see SCHALK, "National-ökonomie und Numismatik" (1891); LESCHINSKY VON LEUNGROTH, *Die Münze als historisches Denkmal* (1906); JESU, "Münze und Geld in Geschichtswissenschaft" (1937).

and the problems of the universe or of the human mind and soul, as seen in such works as Georg Simmel's *Philosophie des Geldes* (1922), and E. Lippold's *Geld: Eine sozialpsychologische Studie* (1921) are part of the philosophy and psychology of money. Unfortunately, they present only loose ties with numismatics as such.

The history of art, however, offers a wider and more pertinent relationship with the field of numismatics to the mutual benefit of both areas. In many cases, so-called applied numismatics enables the art scholar to use numismatic evidence as a support or invalidation of certain historical conclusions or to supply entirely new evidence that is unobtainable elsewhere.

Coins often are a basic historical source. To the trained eye of the archeologist or historian, they may reveal aspects of civilizations and races which have disappeared and left few or no records. A classic example of such research is the brilliant detective work accomplished recently by Prof. Andreas Alföldi of the Institute of Advanced Study at Princeton. Dr. Alföldi cast light upon the cult of Diana-Hekate-Selene—a syncretistic three-fold divinity venerated in the sanctuary at Aricia (Italy)—by re-interpreting the figures (previously identified as nymphs) represented on a tiny Roman Republican silver coin which had been struck in 43 B.C.⁹

In many cases coins can help to date ancient monuments: the composition of hoards may serve as circumstantial evidence in tracing migrations, army encampments, trade routes, or tides of colonization and expansion. Actually, the beginnings of numismatics as a scholarly discipline is related to such an application of old Roman coins in the Renaissance and pre-Renaissance: Italian historians used these coins to help identify ancient portrait busts of emperors or to interpret passages from classical authors.

THE SOURCES OF ANCIENT COINS

What has brought ancient coins into the hands of collectors and scholars?

One answer which may seem unusual to modern man is the fact that, in earlier times, coins often circulated for centuries, defying national borders: the metallic content was the only guarantee necessary for their acceptance. One of the most eloquent examples of such an occurrence was found in southern France, where copper coins which had been struck during the reign of Constantine the Great (A.D. 323–337) still were circulating in remote places during the time of Napoleon III (1852–1870).¹⁰ Another instance comes from Spain, where a bronze coin of the Roman Emperor Domitian (A.D. 81–96) was found to have

circulated until 1636 when it was counterstamped during the monetary reform of Philip IV.¹¹

Another fact which contributed to the increase of interest in old coins was their special appeal as ornaments and jewelry. Many ancient rings, bracelets, necklaces, and even medieval reliquaries utilized coins which were considered beautiful, precious, or miraculous. Lenormant, quoting from contemporary sources, mentions that “ancient coins in gold and silver were used in jewels like gems.”¹²

The main source of coins, however, especially ancient Greek and Roman pieces, is the innumerable hoards which have been uncovered. Entrusted to safe, deep hiding places in the ground or in a riverbed in moments of danger, war, fire, or even for normal safekeeping, these coins often are brought to the surface, by pure chance, decades or, in many cases, centuries later. Local legends of a blue flame, a will-o'-the-wisp, monsters guarding treasures, or curses protecting pirate hoards have helped to perpetuate the memory of tremendous wealth hidden in the earth. Some of the most fantastic folk tales fade before many extraordinary finds. Treasures of almost limitless wealth, exquisite beauty, as well as inestimable value for historian and art-historian are found continually, the number of coins sometimes exceeding tens of thousands.¹³

The ancient author Philostratus (c. 170–245) mentions a hoard of 3000 Persian gold darics found in Antioch, Syria, before A.D. 250. In about 1543 peasants discovered, in the streams of the river Streiu in Transylvania, the famous “treasure” of the Dacian king Decebalus, consisting of over 40,000 Greek gold staters.¹⁴ The Adriatic coast of the Balkan peninsula is often the site of large finds of Roman silver denarii—a witness sometimes of the misfortunes of a retreating army which lost its entire pay chest. The devastating

⁹ BIANCHET, “Sur la chronologie établie par les contre-marques” (1907).

¹⁰ *La monnaie dans l'antiquité*, vol. 1, p. 35. See also HULL, *The Medallist's Portrait of Christ* (1920); ZADOKS-JITTA, “Notes and Questions on Coin Ornaments” (1957), “Munsieraden” (1958); GRIFFIN, “The Canterbury (St. Martin's) Hoard of Frankish and Anglo-Saxon Coin Ornaments” (1955).

¹¹ See BIANCHET, “Les rapports entre les dépôts monétaires et les événements militaires, politiques et économiques” (1936); HAEVERNICK, “Welches Material kann die Numismatik zur Feststellung der Verkehrsgebiete in Deutschland im XII. und XIII. Jahrhundert liefern” (1936); WERNER, “Münzschatze als Quellen historischer Erkenntnis” (1950–1951).

¹² For a detailed account of this hoard, see MARTIAN, “Comori ardene” (1921); Noi, *Bibliography of Greek Coin Hoards*, p. 265.

⁹ Deja Nemorensis” (1960).

FRIEDENBERG, *Die Münze u. der Kulturgeschichte*, p. 3.

marches of armies during the Seven Years War (1756-1763) were the source of many of the treasures found on German territory. Intricate Byzantine and especially Arab trade routes, confirmed by coin finds which lead as far north as the Russian and Scandinavian territories, or the widespread commercial transactions of the Vikings are only a few aspects of the complex life of the Middle Ages which have come into fuller light through invaluable information drawn from coin hoards.¹⁵

High tides, heavy rainfalls, an axe, or a plough, by pure accident, will unearth treasures which have lain for centuries or even milleniums within man's reach. Very often, of course, scientifically directed excavations of historic sites yield coins along with the archeological findings. In many instances these coins serve to date other artifacts of the site, or, if the case requires, the coins in turn can be dated with the help of objects already dated. Studies of coin finds from archeological excavations have often resulted in valuable contributions to ancient numismatics. An example of such, among many, is the work done in recent years by a number of American scholars.¹⁶

The past eighteen years have produced, by a surprising coincidence in separate locations, some of the most extraordinary finds in ancient Greek coins. Workmen engaged in modern construction on the site of an ancient Greek sanctuary in the little Sicilian town of Gela found almost a thousand silver coins. This hoard has proven to be one of the greatest accumulations of archaic Greek coins, containing an impressive series of some of the best examples of coin art of the late 6th and early 5th centuries B.C. A few years earlier, a hoard of Syracusan dekadrachms—generally considered the most beautiful Greek coins of antiquity—dating from the late 5th century B.C., was

discovered in the bed of a small creek at Gela in Sicily. A find in Timis of Carthaginian tetradrachms, half gold staters and a recent discovery of 100,000 dekadrachms from Carthage make these exceedingly rare coins—known heretofore from only a few specimens—accessible now to many collectors. The Boston Fine Arts Museum recently acquired a hoard of fifteen late Roman aurei and five gold medallions from one of the most important finds of Roman gold coins in the past few decades. Similarly, the hoards of thousands of Venetian ducats continually being found in the Near East afford increasing evidence to the historian of the thriving trade routes which once connected this Italian maritime republic with the Levant.

In such ways new varieties and even new coin types and denominations constantly appear, shedding light on the dim image of events or monuments which are separated by a long space of time from our own civilization. Unfortunately, records of these hoards often are scattered or deliberately distorted despite the attempt of scholars to register all finds as often and as faithfully as possible.

The wide possibilities for numismatic research opened up by expert investigation of coin hoards, recognized in the past by such scholars as Bror L. Hildebrand or Kurt Regling, have led in recent decades to intensified work in this field. Numerous publications have appeared in the postwar period. The list of outstanding European scholars involved in this research ranges widely, from Sweden to Spain, from France to Russia, the countries beyond the Iron Curtain participating actively in the effort. Currently, a new problem has arisen: to coordinate, on an international basis, all the efforts and methods of this scientific investigation of coin hoards which has been done separately by the various national groups.

Some countries try to solve the immense workload through a systematic scanning of all the data available. Many publications in this aspect of research come from: Germany, with Munich as the center for the Roman hoards found in that country,¹⁷ and Hamburg, for the German catalog of hoards buried after A.D. 800; England, where James David A. Thompson published an *Inventory of British Coin Hoards, A.D. 600-1500* (1956); and East European countries, where Mrs. I. Nobejlová-Prátová in Prague and Mr. Jack

¹⁵ For the Byzantine trade, see ADERSON, *Light Weight Solidi and Byzantine Trade* (1957) and "Early Medieval Trade Routes" (1960); GRIERSON "Commerce in the Dark Ages" (1959). For the Viking period, see JANKEHN, *Haithabu, ein Handelsplatz der Wikingerzeit* (1956); LEWIS, *The Northern Seas: Shipping and Commerce in Northern Europe, A.D. 300-1100* (1958). For more bibliographical information, see BERGMAN, "Die frühmittelalterliche Numismatik" (1961); RASMUSSEN, "Scandinavian Medieval Numismatics" (1961).

¹⁶ See BELLINGER, *Catalogue of Coins Found at Corinth, 1927* (1930), *Two Roman Hoards from Dura-Europos* (1931), *The Third and Fourth Dura Hoards* (1932), *The Sixth, Seventh and Tenth Dura Hoards* (1935), and *The Coins* (1949); THOMPSON, *Coins from the Roman Through the Venetian Period* (1954); COX, *Coins from the Excavations at Curium, 1932-1953* (1959); BULLERY, "The Morgantina Excavations and the Date of the Roman Denarius" [in ms., to be published].

¹⁷ A commission directed by Prof. Konrad Klatt has been preparing many reports under the general title *Die Münzen der römischen Zeit in Deutschland*, of which two have been published: KLEINER, *Oberbayern* (1960); TRANKL, *Rheinland-Pfalz*, vol. 1, *Rheinbessen* (1960).

Slaski in Poland have tried to summarize in their publications the numerous but widely scattered data on coin hoards within their national territories.¹⁸

Extremely active also in this field are many outstanding scholars such as Nils L. Rasmusson and a group at the Konigl. Myntkabinettet in Sweden; James D. A. Thompson, Philip Grierson, Michael Dolley, Robert A. G. Carson in England; Jean Lafaurie and a group at the Cabinet des Médailles in France; J. Lallemand in Belgium; and Felipe Mateu y Llopis as the leading name in Spain.

Literary information about coin hoards is given due emphasis in most numismatic publications, but attempts to make widely dispersed data more easily accessible have brought forth a new kind of bibliographical publication such as Sydney P. Noe's *Bibli-*

ography of Greek Coin Hoards (1925) and Sawyer Mosser's *Bibliography of Byzantine Coin Hoards* (1935). Both are major attempts to collect all of the bibliographical information pertaining to the coin hoard material of a specific period.

Similarly, many numismatic monographs devote special chapters to hoards. An example is Rudi Thomsen's recent study, *Early Roman Coinage: A Study of the Chronology* (1957), an attempt to review and revise the controversial problem of the dating of the so-called Romano-Campanian and early Roman issues. Mr. Thomsen regards the actual composition of hoards as essential evidence in establishing the chronological sequence of different issues and as a strong clue for their conclusive dating.

BEGINNINGS OF COIN COLLECTING

We probably can assume with safety that coin collecting extends as far back into history as coins themselves. The incentive to gather coins as well as any other interesting object is comparable to a refined hunting instinct, which can be found at any human age level regardless of social or cultural background; only the motive or goal defines the difference among collectors. Coins as expressions of the wealth to be found in gold and platinum, odd coins as curios, old coins as historical mementos, beautiful coins as specimens of art, coins as sentimental souvenirs of special dates, events, or places—these are only a few of the motives behind coin collecting. Every historical period or geographical area is characterized by its peculiar interest. Even collecting as a financial investment has emerged as a recent trend—something practically unknown in earlier times when collecting was determined largely by historical and artistic considerations.¹⁹

Since the days of the Greeks and Romans, the classical authors, such as Pliny or Plutarch, have written about famous art collections. Although not specifically mentioned, these collections probably included many coins famous for their artistic qualities and even signed by well-known artists.²⁰ Such a probability is

¹⁸ NOH JI OVÁ-PRÁTOVÁ, *Všecky nálezy: Či hádky, na Morave a v Slezsku* (1955-1958); SLASKI and TABACZYNSKI, *Wczesnośredniowieczne kachy srebrne. Wzrost polski* (1959).

¹⁹ As an example, see BILINSKI, *Gadki o Ciołku i smole* (1958).

²⁰ See FORER, *Antiquities of the Jews* (1906); LUDIER, *Die Tetrarchenprägung in Syrien* (1913).

supported by the viewpoint that the beauty of ancient coins and the apparent care used in preparing their dies demonstrates the high regard in which the esthetically minded Greeks held coins. The issuing of coins often was a subject of national pride, an incentive for competition among cities. Western Greeks, especially in Syracuse, surpassed the rest of the Greek world in the mastery of coin engraving. An example of obvious contemporary appreciation can be seen in a cup of black-glazed terracotta from South Italy, a so-called Calene kylix, of which one is preserved in the Boston Fine Arts Museum (fig. 2).²¹ This bowl uses, as a center medallion, the head of the nymph Arethusa, reproduced from the already famous Syracusan dekadrachm which had been engraved by Euainetos in the late 5th century B.C.²²

To collect and even reproduce such paragons of ancient engraving was not an isolated phenomenon in the ancient world. More than likely, among the objects of art collected by the royal houses of the Ptolemies of Egypt and the Seleucids of Syria, or maintained in the famous collection of King Mithridates VI of Pontus, which was brought in triumph to Rome after his defeat by Lucullus and Pompey (65 B.C.), there were rare and beautiful Greek coins.

²¹ Another specimen from the Metropolitan Museum is reproduced in RICHTER, "A Greek Silver Phiale," p. 386.

²² Additional information is in EVANS, "Syracusan Medallions" (1891), and especially RICHTER, "Calenian Pottery" (1959) and "Ancient Plaster Casts" (1958).

The historians Pliny and Livy as well as Cicero give accounts of the tremendous treasures brought to Rome by her victorious generals. Pliny states that Servilius "removed, in accordance with the rights of war and his powers as general, from the enemy city that his strength and valor had captured, statues and objects of art which he brought home to his country-

deposited in the Temple in Syracuse, in the Temple of Athena in Ephesus, and in the shrines of Dea Demeter and Olympia—the monuments of antiquity."²³ Julius Schlosser affirms that the treasures of the gods "were, in fact, public property and that, in a particular sense, the temple-shrines and their territories could be considered the oldest public museums."²⁴



Fig. 2.—SYRACUSAN DEKADRACHM copied on a kylix from Cales (photos courtesy Museum of Fine Arts, Boston, above, and American Numismatic Society).



men, displayed them in his triumphal procession, and had them entered in the official catalog of the public treasure."²⁵ Certainly among such booty was money—that is, coins. Larger coin accumulations already had been recorded in earlier times, when pious pilgrims deposited precious gifts in the sanctuaries of temples.²⁶ Ernest Babelon called these

"The coin—its origin and essence—was a favorite subject discussed often by Greek philosophers. Aristotle's definition of the coin as an ingot of specific intrinsic content, with a legal value determined by the state, and Plato's rejection of gold coinage in favor of copper are theories which have stimulated deeply the thinking of economists and historians since ancient times."²⁷

²³ CICERO, *Verrin. Oratums*, I, 21, 57.

²⁴ See the discussion on deposits of coins and precious objects in the foundations of the Artemision in Ephesus in ROBINSON, "The Date of the Earliest Coins" (1956).

²⁵ BABELON, *Trésors*, vol. I, col. 68.

²⁶ SCHLOSSER, *Temples and Their Treasures*, p. 1.

²⁷ GARNARD, *Debitum et Creditum* (1933).

With the rise of Roman civilization, coins lost considerably in their esthetic qualities. Shaped by the more utilitarian character of the Romans—who revered national glory and family tradition more than culture and art—coins tended less to be objects of refined artistic interpretation and were invested, instead, with the more practical characteristics of a gazette.²⁸

One of the basic approaches especially favored by the Roman Emperors was the use of coins as an important medium of propaganda, with the intention of diffusing and, at the same time, preserving for posterity an account of glorious events. This fact implicitly conferred on coins the character of historical documents and, indeed, they did prove to be ideal records for the Romans. Small, easy to store, almost impervious to mutilation or decay, relatively easy to obtain, coins could hardly have failed to appeal to the history-minded Romans as objects which were immediate witnesses to the past.

It was customary in Rome, as it also had been in Greece, to present coins as gifts on festive occasions, a tradition which Ovid has recorded.²⁹ The historian Suetonius (in Augustus 73) records that Emperor Augustus would distribute on the occasion of the Saturnalia festivities, among other precious gifts, various unknown foreign coins or coins with portraits of ancient kings: “. . . nummos omnis notae, etiam veteres regios et peregrinos.” Apparently, Augustus was following a general trend when he included in his largess old coins as precious and desirable objects.

Interest in old coins was continued by some of Augustus' successors, Titus, Domitian, and especially Trajan; in fact, the latter reissued some silver and even a few gold coins of not only his predecessors but also of the Roman Republic. Such “restitution” coins, marked clearly as such by the addition of the inscription *RESTITUTUM*, duplicated exactly the design and legend of the originals. They furnish significant evidence for the existence of some sort of collection of old coins which could have served as models for the “restitution” issues—without supporting Robert Mowat's greatly disputed theory that the Roman mint had a collection of old dies which were used in the striking of these special issues.³⁰

²⁸ ALFÖLDI, “Main Aspects of Political Propaganda on the Coinage of the Roman Republic” (1956).

²⁹ MÜLLERBERG, “Über die Anfänge der Numismatik” (1914).

³⁰ MOWAT, “La reconstitution des collections de coins aux I^{er} et II^e siècles” (1909) (see also MÜLLERBERG, *op. cit.*).

At any rate, these “restitution” coins do reveal a certain “numismatic” interest which could have been responsible in part for initiating the issues, although undoubtedly the chief motivation was the attitude toward coins as an official chronicle of past glory.³¹ Trajan, for example, reissued in A.D. 107, among other coins, silver denarii struck during the Republican era by the moneyer Quintus Tadius (fig. 3); he also



Fig. 3.—ROMAN REPUBLICAN DENARIUS, top, and Trajan's “restitution” coin (author's photo).

reissued the so-called Romano-Campanian didrachm which had been struck even earlier, sometime between 235 and 220 B.C. In using coins which were over three hundred years old, Trajan not only recognized, as did his predecessors, the political and religious importance of coins, but also their historical significance. In a sense it might be said he helped to foster “numismatic” interests among the Romans.

The rapid expansion of the Empire brought Romans into contact with strange and hitherto unknown civilizations. It is reasonable to assume that the enormous booty brought back to Rome by its victorious generals contained, among other objects of value, innumerable coins which found their way into private collections, along with gems and cameos—items related to coins through subject matter and engraving technique. Even if the discriminating taste of the art-loving Greeks was not always evident in the Roman public art “collections,” in the parks, or in the magnificently adorned villas of patricians, the Romans certainly tried to imitate the refinement of Greek culture and to appear as patrons of the arts. It is a well-known fact, mentioned by Horace, that,

³¹ MATINGLY, “The Restored Coins of Trajan” (1926), with a good bibliography on the subject, and “The ‘Restored’ Coins of Titus, Domitian and Nerva” (1920); see also BERNHART, *Bibliographischer Wegweiser*, p. 57.

during the late period of the Republic, patricians paid exorbitant prices for statuary works,³² or, in Pliny's words: "... there is an almost more violent passion for works of fine handicraft. . . . the orator Lucius Crassus had a pair of chased goblets, the work of the artist Mentor, that cost 100,000 sesterii."³³

Augustus himself indulged in the pleasures of the collector, and it was said that he was exceedingly fond of fine furniture and Corinthian vessels. His houses he adorned not so much with statues and pictures as with "things which were curious, either for their antiquity or rarity." At his retreat in Capri he had "huge limbs of sea-monsters . . . and also arms of ancient heroes."³⁴ We can safely assume that some beautiful coins found their way into the same collection since they were given occasionally as gifts.

MIDDLE AGES AND EARLY RENAISSANCE

With the decline of Rome's political might—undermined by economic chaos and subjected to the steadily growing pressure of invading peoples from the East—Roman culture and civilization soon were on the verge of collapse. The leisure of the "golden era" of Augustus or Hadrian was gone, and retrospective or contemplative occupations like coin collecting certainly were out of place. Moreover, the rise of Christianity, with its strong ascetic spirit, hardly would help promote investigations into coins, which reflected a pagan past populated by gods, goddesses, and heroes, all with a strong emphasis on physical beauty. As a result, ancient coins for the most part remained in oblivion. The Middle Ages, with its household-centered economy, with trade and travel reduced to a minimum, knew little about coins. While gold circulated freely in the Byzantine Empire, the man in the West seldom saw more than small silver coins. Under such circumstances any collection of coins had only a slim chance of surviving the great scarcity of mintable metal. The attitude of the Middle Ages toward works of art—and implicitly coins—can best be characterized as follows: "Some saw in them monuments of idolatry and as such reprov'd them; others attributed magic

to them; some, if not perhaps all, were valued by the author, probably had their place in fact among many art objects. There is direct evidence on an aspect of coin collecting. Pliny is surprised to learn that "purious methods are object of study," and a sample of a forged denarius is carefully examined and the adulterated coin is bought for more than genuine ones."³⁵

In later periods, from the 4th century and far into the 7th century A.D., large medallions in bronze and gold were distributed by the emperors on special occasions.³⁶ These tokens of imperial munificence functionally combined their role as historical records with their more basic aspect as objects of monetary value—both of which caused these pieces to be kept and treasured.

forces to them; others again were carried away by admiration inspired by the immensity of Roman ruins, the wealth of prime material, the perfection of manufacture."³⁷

Very often old pagan representations were assimilated as Christian symbols, and it was not rare for a Hercules or an Aphrodite to be regarded as Christ, the Good Shepard, or the Virgin. Ancient gems with mythological subjects were misinterpreted and often were attributed supernatural powers. Moreover, seldom did ancient coins fail to be regarded as talismans;³⁸ their inscriptions presented, in most cases, an additional element of mystification. A classic example is a tetradrachm of Rhodes, incorrectly identified for centuries as one of the "thirty pieces of silver" for which Judas betrayed the Saviour (fig. 4). In another instance, a gold solidus struck in the name of Emperor Zeno (A.D. 474–491) was worshipped in Milan, Italy, as "argento dei tre magi," or the coin offered by the Magi to the infant Christ.³⁹

³² *Natural History* xxxiii, sskl 132.

³³ LOYSELI, *Roman Medallions* (1914); GREGG, *Italy and the Roman* (1912).

³⁴ MENZIE, *Les Trésors de Capri*, *Revue Archéologique* (1889), p. 90, 91, in BAILEY, *Italy*, vol. 1, col. 3.

³⁵ MILY, *Le numisma Luchena*, de CP, 11, 1909.

³⁶ HILL, *Medals of the Roman Empire*, p. 141; BAILEY, *Italy*, vol. 1, col. 7.

³² Cf. MÜNSTERBERG, op. cit., p. 271; RICHTER, "A Greek Silver Phiale," p. 385.

³³ PLINY *Natural History* xxxiii, lili, 147; CICERO *Verrine Orations* ii, 7, 14.

³⁴ SULTONIUS, *Lives of the Twelve Caesars*, Augustus, lxviii–lxx.

The compelling mysticism which guided pilgrims toward the Holy Land was extended also to the coins which pious men brought back from their pilgrimages. These coins surpassed by far the interest accorded to the usual souvenir pieces of travelers, and they were invested with supernatural powers. Occasionally mounted in reliquaries, these pagan coins—bearing, for example, the facing head of Sol the sun-god—became objects of Christian piety.⁴⁰



Fig. 4.—TETRADRACHM OF RHODES, regarded as one of the "thirty pieces of silver," as published in 1553, and the actual coin (photos from Rouille, above, and courtesy American Numismatic Society).

Ancient classical tradition, never entirely extinct even during the darkest hours of history, began to revive with the aid of enlightened persons about the turn of the millennium. Earlier, during Charlemagne's time, Roman tradition had reappeared as a stimulus for civic and cultural awakening, but with Frederick II of Hohenstaufen (1212-1250) art and erudition came into a resplendent revival which was built on an ancient and especially Roman background.

Frederick's newly created gold coin, appropriately called *augustalis*,⁴¹ in many respects reflects

⁴⁰ For the story of many of these pieces—regarded as the authentic coins of Judas and worshipped in numerous churches of the Middle Ages—and their influence on contemporary Biblical interpretations, see Hill, *op. cit.*, pp. 91 ff. and especially 103-114.

⁴¹ For the "augustalis," see: WINKELMANN, "Über die Goldprägung Kaiser Friedrichs II" (1894); PEISTER, *Kaiser Friedrich II*, pp. 184, 192; WALT, *Wieder in Welt*, pp. 258, 271; WEISZEL, "Der Augustalis Friedrichs II und die abendlandische Glyptik" (1752).

Roman coin concepts and designs (fig. 5). The implication again seems unavoidable that there was a source of inspiration strong enough to determine a decisive turn from medieval coining traditions back toward earlier classical forms. The creation of this coin certainly suggests the presence of Roman coins from which it drew an apparent inspiration. Can this factor be considered sufficient evidence for the existence of coin collections? Due to the lack of adequate documentation, we may only assume that it does.

Italy, the classic land of archeological treasures, constantly revealed evidence of an earlier, superior culture with sculpture, monuments, inscriptions which puzzled medieval man and posed intriguing problems. In a sense it was impossible to erect spiritual barriers strong enough to repress the revival of classical culture. Even the Christian church had to adjust to the new challenge; Thomas Aquinas proceeded to complete the integration of classical learning within the framework of Catholic theology. It is interesting to note that, among the preoccupations of these encyclopedic minds of the late 13th and 14th centuries, monetary theories were often a cherished



Fig. 5.—AUGUSTALIS OF FREDERICK II (1212-1250) and gold solidus of the Roman Emperor Honorius (395-423) (author's photos).

subject. In *De regimine principis* Aquinas discusses the function and evolution of money,⁴² and Nicholas Oresmius (1320-1382), in his *Tractatus de origine, iure nec non et mutationibus monetarum*, gives numismatics the serious consideration of a science.⁴³ Gonnard regards Oresmius as the founder of an economic monetary doctrine,⁴⁴ and, as Babelon states, "with Oresmius, there finally appeared a reformer and a theoretician."

During these times, when the spiritual lethargy of

⁴² For Aquinas' economic writings, see: COSTZEN, *Thomas von Aquino* (1861); JESSE, *Quellenbuch* (1924); GONNARD, *Doctrines monétaires* (1935).

⁴³ For Oresmius, see: WOJOWSKI, *Traicte* (1864); JOHNSON, *The De moneta* (1956); DILUONNÉ, "La théorie de la monnaie à l'époque féodale et royale" (1909).

⁴⁴ *Doctrines monétaires*, p. 125.

the early Middle Ages seemed to be passing and a desire for erudition to be awakening, coins proved a wonderful and direct source of learning. As a result, the general quest among humanists and art lovers to collect interesting and beautiful coins spread rapidly, and soon the pre-Renaissance period was rich with remarkable collections. An outstanding example of such art lovers is the great Florentine Petrarch (Francesco Petrarca, 1304–1374), one of the most brilliant minds of the early Renaissance, the “first modern man,” as he has been called. This greatest among Italian humanists owned ancient coins and appreciated them highly. In his *Epistolae de rebus familiaribus* he describes with emotion the coins he bought from peasants during his stay in Rome, coins on which he could decipher the names and features of Roman emperors: “. . . sive ut emerem, sive ut insculptos eorum vultus agnoscerem.” He presented some ancient gold and silver coins to Emperor Charles IV as a stimulus for the ruler to follow in his reign the example of Rome. On this occasion Petrarch confessed how much he enjoyed collecting coins: “. . . aliquot sibi aureas argenteasque nostrorum principum effigies, minutissimis ac veteribus litteris inscriptas, quae in deliciis habebam, dono dedi . . .”⁴⁵

Petrarch’s interest in Roman antiquities was shared by many of his friends, among them the famous tribune of the people and leader of a popular uprising against the patricians in Rome, Cola di Rienzi (1313–1354). A listing of collectors in the 14th century would include numerous other famous names, most of them Italian.

By a strange irony, Petrarch’s great admiration for these minute, ancient historic documents initiated the nefarious custom of “counterfeiting” ancient coins. From his stimulus, Marco Sesto and Francesco Novello of Carrara began to engrave coins in imitation of ancient pieces. In their eagerness to complete the iconographic series of Roman emperors they were not aware that they actually were violating the cardinal requirement in numismatics—authenticity. Such reproductions found ready acceptance and many collectors followed the example of Duke John of Berry, who included in his own collection a number of such portrait coins. In addition to original compositions of the sixteenth century, there can be found also the so-called Paduans, a collective name which designates a group of ancient coin imitations, chiefly Roman medallions, begun by the famous

engrave Giovanni Cassini (1541–1609) of Padua. His work found wide approval in the sixteenth and eighteenth century, with Giovanni Minusmann (1661–1720), David Kohler⁴⁶ or Johann Heinrich Schulze (1690–1754) his artistic skill and his sincere intentions in promoting interest in Greek and Roman art. Currently, as Prof. Willy Schwabacher has noted,⁴⁷ these pieces are not regarded any longer as falsifications in the true sense of the word.

The rise of the Italian maritime republics of Venice and Genoa, with their far-reaching commercial ties, brought considerable wealth to the mainland. On the basis of flourishing economic conditions, an unparalleled upsurge in cultural activities began. The upper classes of these republics competed against the aristocracy and the wealthy bourgeoisie of other powerful Italian cities like Florence, Siena, Pisa, Milan, as well as the splendid court of the popes in Rome. There, Cardinal Barbo, who later became Pope Paul II (1464–1471), assembled an outstanding collection of antiquities which formed the basis for the St. Mark Museum. In the art collections of the Farnese, ancient coins found their place.

Antonius, Cardinal of St. Mark, a nephew of Pope Eugene IV (1431–1447), was well known for his collection of ancient coins, which contained 97 gold and over 1000 silver coins.⁴⁸ In Florence the great Cosimo de’ Medici (1389–1464) included, in his collection of famous art objects, Greek and Roman coins, to which his sons Pietro and Lorenzo the Magnificent (1448–1492) added many significant pieces. An inventory taken in 1465 shows 100 gold and 503 silver coins in the Medici cabinet, to which later were added 1,844 copper coins.⁴⁹

Alfonso V (1416–1458) of Aragon, King of Sicily and Naples, a true son of the Renaissance who read and admired the classical authors, kept his coins in an ivory coffer which he carried along on his travels. It was said that the sight of these pieces was a strong incentive for him to imitate the virtues of those whose images they represented.

⁴⁶ See LAWRENCE, *Medals by Giovanni Cassini* (1883); CHOWEN, “Paduan Forgeries of Roman Coins” (1956); BURKHARD, “Paduani” (1912); KRECH, “Numismatisches ‘Kunst-Verbrechen’ im Urteil der Zeitgenossen” (1954). For bibliographical information, see BURKHARD, *Handbuch*, p. 57.

⁴⁷ *Historische Münzkunde*, vol. 18, pp. 102–104.

⁴⁸ “Münzen des Altertums,” pp. 153–154.

⁴⁹ SERMINE, *Le musée de Médailles de Florence*, vol. I, Musée Métrax, *Les arts à la cour des Papes* (1888), p. 181.

⁵⁰ See MÉTRAX, *Les collections des Médailles*, pp. 10, 11, 31–32.

⁴⁵ BARTON, *Italy*, vol. 1, cols. 83–84.

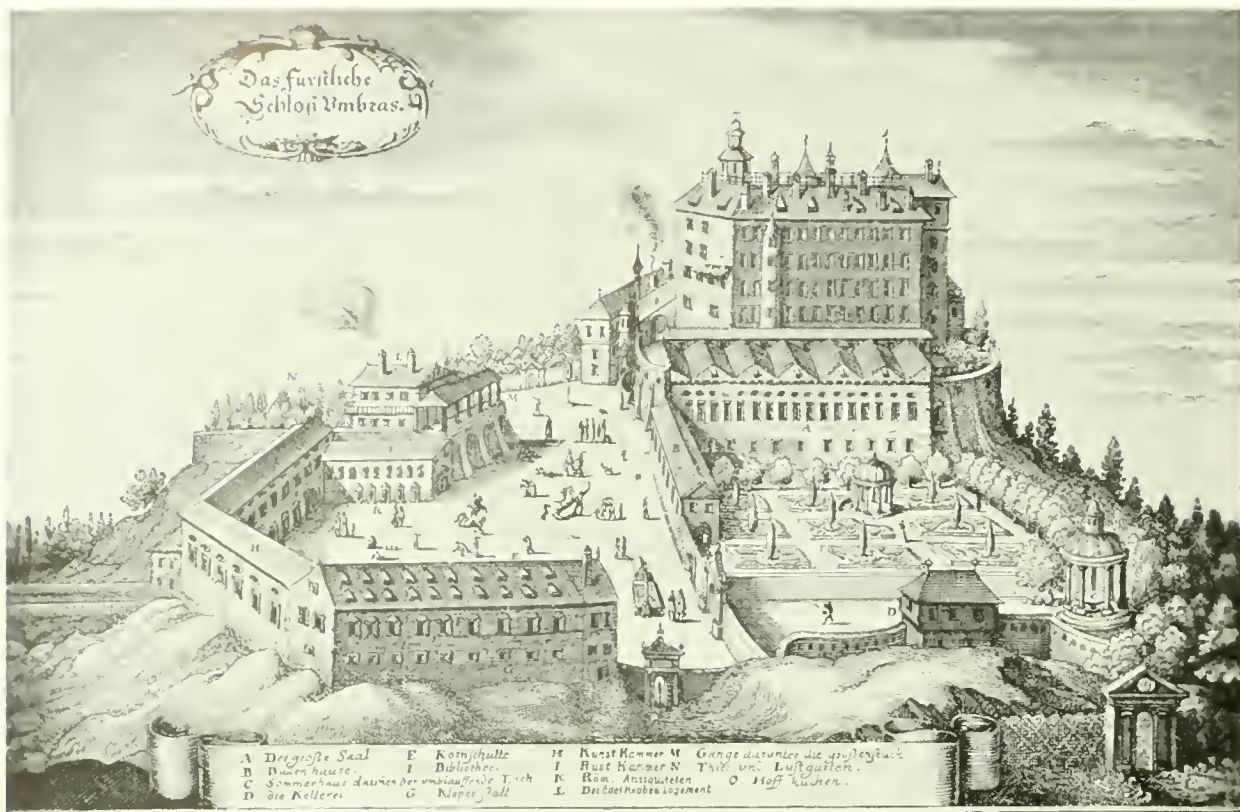


Fig. 6.—AMBRAS CASTLE IN THE TYROL where Archduke Ferdinand kept his art treasures (photo from Schlosser).

Beyond the Alps, the Hapsburgs were prompted to collect coins in order to complete the portrait galleries of the Holy Roman emperors by including the Roman iconographic series. Old documents indicate there were collections in Hapsburg possession as early as the 13th century, but not until Emperor Maximilian I (1493-1519) can we speak of an actual coin collection at the Vienna court. The first reference to it occurs in an inventory made by the Imperial "Kammerdiener" Heuberger in 1517 during the rule of Emperor Ferdinand I (1531-1564), a great patron of art who created the Viennese "Kunstkammer" in 1563.⁵¹ At the Court of Buda in Hungary, King Matthias Corvinus (1458-1490) assembled a circle of humanists and antiquarians who helped him enrich his collections of art objects and ancient coins.

⁵¹ Ferdinand I referred to his collection in his will; see LUSCHN VON LEINGRIE III, *Die Münz- u. alt-historisches Denkmal*, p. 39. For the inventory, see HEUBERGER, "Das wiedergefundene Inventar der Münzsammlung Ferdinands I" (1961).

One of the characteristics of most of the collections during the 15th and 16th centuries was their heterogeneous content. They were planned as accumulations of precious objects—such as jewels and rich garments—of unusual specimens, and of curios. These early periods betray little of the refinement reflected in many of the collections of the later Renaissance, when genuine esthetic appreciation of art objects and a scholarly interest in science and history were the chief criteria. The approach of the pre-Renaissance collector was less sophisticated; in childlike bewilderment, he yearned mainly for the exotic, the mystic. In the "Wunderkammern"⁵² curio cabinets, skeletons of strange animals, and artifacts of remote peoples often abounded and even took precedence over real products of art. Only very slowly was the mysticism of the Middle Ages dissipated before a realistic ap-

⁵² See SCHLOSSER'S interesting work *Die Kunst- und Wunderkammern der Spätrenaissance* (1908).

proach to nature and the childish desire for puzzling wonders was replaced by a mature pleasure in exquisite art objects or interest in documents of the past.

One of the famous "Wunderkammern" of the 16th century was in the castle of Ambras near Innsbruck (fig. 6). Here Archduke Ferdinand (1529–1595), a son of Emperor Ferdinand I, accumulated an extensive collection of historic objects.⁵³ During its time the fame of the Ambras museum spread far among contemporaries, and many scholars and traveling nobles considered it a worthwhile attraction. Among other things, the Archduke had an excellent collection of Greek and Roman coins, which apparently he enjoyed and studied frequently since he had constructed two elaborate coin cabinets wherein he could store his treasures (fig. 7). After his death the coins, with the rest of the collections, were sold by his son to Emperor Rudolph II. In 1713, during the reign of Charles VI, many of the coins were selected by C. Heraeus for the Vienna cabinet.

During the late 14th century, France could claim the most famous art collector and patron of the age in John the Duke of Berry (1340–1416), brother of King Charles VI. The fame of his art treasures, which he kept in the castle at Mehun-sur-Yèvre, travelled far, and even a half century later an Italian scholar observed that the Duke was well known as an art lover and no sum of money was too high for him to acquire an important work of art.⁵⁴ The inventory of his collection, made by Jules Guillfroy between 1401 and 1416, included, in addition to a notable

collection of Roman gold and silver coins, a gold and silver lions with various emblems on their bodies. The Duke had purchased these pieces for 100,000 francs in Italy with the intention of illustrating the history of Christianity during the Roman Empire.



Fig. 7.—COIN CABINET OF ARCHDUKE FERDINAND of Tyrol (photo courtesy Kunsthistorisches Museum, Vienna).

RENAISSANCE AND CINQUECENTO

When the mysticism of the Middle Ages had faded and more empirical thinking had set in, the past and its luminous world of the ancients came to life through historical and philological research. Classical authors were studied, interpreted, and imitated. Anything that could bring quattrocento man nearer to the ancient sources of knowledge was valued highly, and coins often were regarded as a key to the mysterious world of the past. The pre-Renaissance and the Renaissance itself were, therefore, a golden age for the development of numismatics—when coins were

collected and studied with increased intensity, interpreted and sometimes misinterpreted. Because the outburst of this resplendent, vigorous, and youthful intellectuality was not limited to a select number of scholars but flowed in a broader current which broke through social barriers, the number of devotees grew rapidly.

Although Petrarch's broad outlook and scholarly approach conferred upon numismatics the dignity of a real science and although popular preoccupation with coins took a more erudite turn, learned absurdities were not rare. With Gutenberg's invention, books containing pictures became popular, and as a result, iconographic studies of ancient rulers and literal presentations of ancient myths were published

⁵³ SCHLOSSER, *op. cit.*, pp. 36–66; NERKEHO, *Münzaphis*, p. 21.

⁵⁴ SCHLOSSER, *op. cit.*, p. 26.

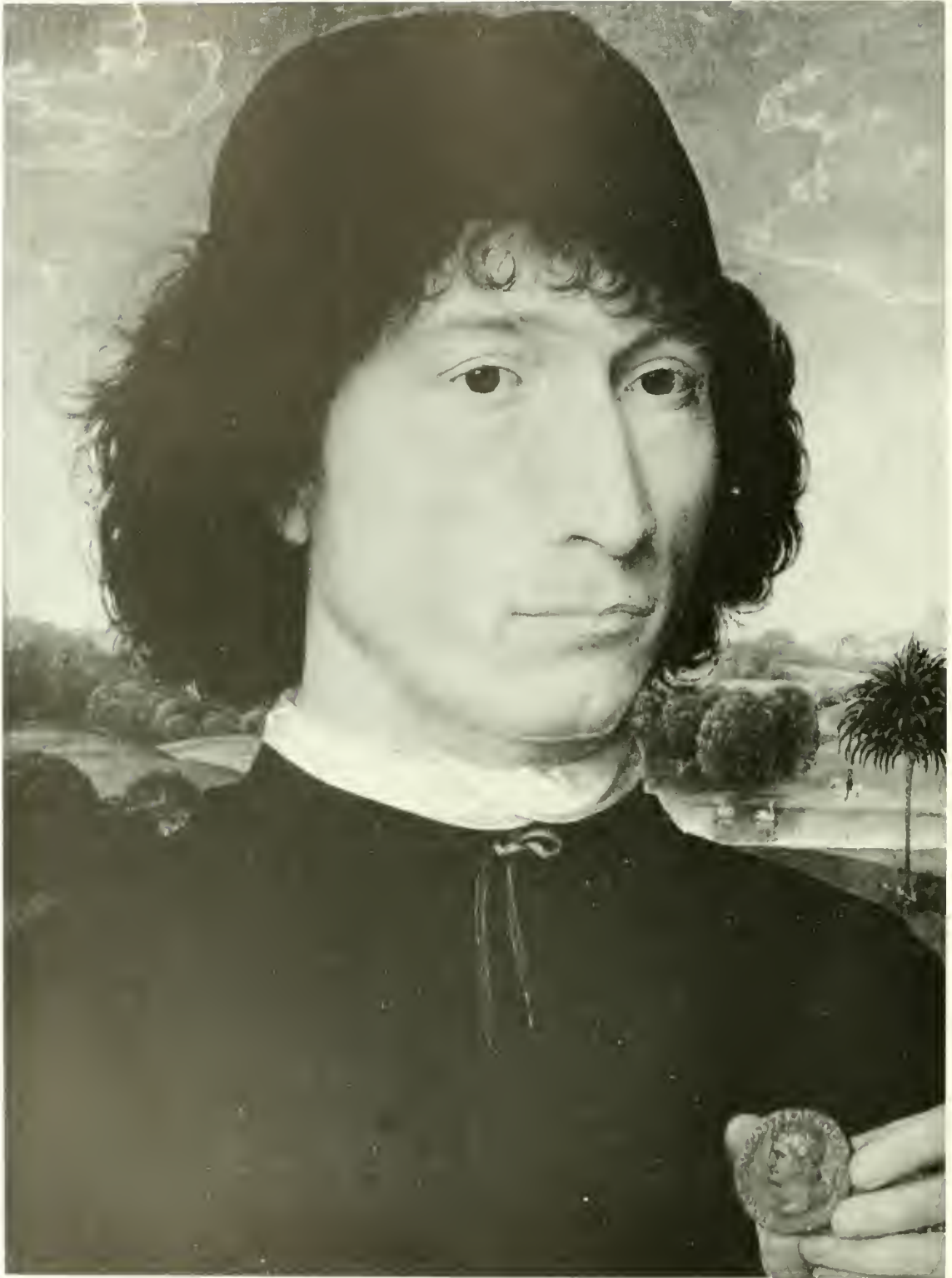


Fig. 8.—ITALIAN RENAISSANCE GENTLEMAN with coin of Emperor Nero in a painting by Hans Memling (photo courtesy Musée Royal, Antwerp).



NOE, fils de Lamech, a obtenu grace enuers Dieu, qui l'a reputé estre homme iuste & parfaict. En son temps estoient au monde aucuns Geans, qui faisoÿt beaucoup d'outrages à toutes nations du monde. Alors Dieu, voyant les grans maux qui regnoÿt en la terre, delibera en soy mesme, de destruire toutes creatures viuantes, fors Noe & sa famille: si luy feit cōmandement de faire vne Arche, laquelle il acheua en 100.ans. Apres

Fig. 9.—SECTION OF PAGE from *Promptuaire des médailles* (1553) by Guillaume Rouille (Div. of Numismatics photo).

along with the coin illustrations. Only the eagerness to fill in missing information can explain the amazing fabrications of some of these early writers. In *Promptuaire des médailles des plus renommées personnes qui ont esté depuis le commencement du monde*, published in

preted to fit the purposes of the author. For example, the river-god Gelas, a man-headed bull, which appears on an ancient coin from the Greek city of Gela in Sicily, is identified as the minotaur. Comparison with the actual coin reveals how the drawing was changed by addition of the invented legend ΜΙΝΟΤΑΥΡΟΣ (fig. 10).⁵⁵ In another instance, for a coin of the Thracian king Lysimachus, who used the head of Alexander the Great on the obverse, Rouille takes the king's name from its original Greek on the reverse and places it, in a Latin spelling, beside Alexander's head on the face of the coin (fig. 11).⁵⁶

The naive approach of such early publications aroused only a limited interest; more mature treatises, which appeared during the cinquecento, had a wider appeal. The Italian humanist Angelo Poliziano (1454-1494) published his *De numismate antiquo primo* in 1489 in Florence. In this essay he discussed, among other things, ancient coin images such as the daggers on Brutus' coin, regarded generally as an expression of liberty. After this publication, various other numismatic monographs followed in France.

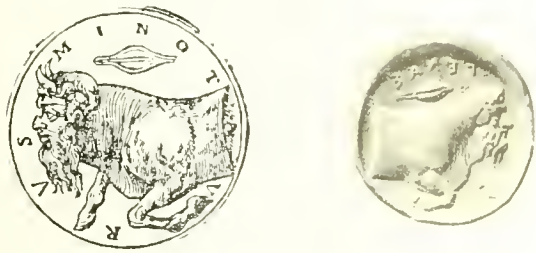


Fig. 10.—RIVER-GOD GELAS on a coin from Sicily, interpreted as the minotaur by Rouille, and actual coin (photo from Rouille, left, and author's photo).

Lyon in 1553 by Guillaume Rouille, there appear, in addition to the drawings of real coin images, imaginary portraits of Adam, Noah, Osiris, Agamemnon (fig. 9). Not only was such fiction mixed with fact but also the real coins themselves often were inter-

⁵⁵ Rouille, *Opusculum*, p. 43.
⁵⁶ *Ibid.*, p. 156.

Germany, Holland, and Spain. Their authors often reflected new trends in research, such as attempts to approach problems of metrology or the value of ancient coins.

First place among them certainly belongs to the French scholar Guillaume Budé (1467–1540), a friend of Francis I. Budé won repute for an excellent collection of Greek and Roman coins, which he used as the basis for *De asse et partibus ejus*, one of the most famous numismatic works of the period. Published in 1515, it was reprinted in 16 subsequent editions by 1550.

Wilibald Pirckheimer in Germany, with his *Aestimatio priscorum numismatum* (1533), Henricus Mameranus, with his *Prisca monetae ad huius nostri temporis diversas aliquot nationum monetas supputatio* (1550), and Didacus Covarrubias y Leyva in Spain, with his *Vetrum numismatum collatio cum his quae modo expenduntur* (1556) are only a few of the authors who tried to explain to contemporaries the significance of ancient coins. The history of prices, the juridical problems of false coins, and the technical aspects of coin manufacture are some of the other questions which were discussed and to which the Germans Georg Bauer [Agricola] (*De mensuris et ponderibus Romanorum atque Graecorum*, 1550) and Joachim Camerarius (*Historia rei nummariae Graecorum et Latinorum*, 1556) tried to bring new answers.



Fig. 11.—TETRADRACHM OF LYSIMACHUS of Thrace, as represented by Rouille, and actual coin (photo from Rouille and author's photo).

In 1511 Margareta Peutingger, wife of the German humanist Conrad Peutingger, sent to her brother Christoph Welser, for publication, a numismatic paper on the titles of Roman emperors. For the same period Ernest Babelon's reports the name of

¹ See listings in LASCHIN VON FENGLUTH, *Allgemeine Münzkunde*, pp. 7–9; BURNHART, *Historia*, pp. 3–4; BABELON, *Traité*, vol. 1, cols. 99 ff.

² BABELON, *Traité*, vol. 1, col. 99.

Wolfgang Lazius (1514–1563), a Viennese doctor who, in his *Commentationum vetustatorum numismatum* (1558), first conceived the idea of a "corpus nummorum," compendium of all the coins of antiquity—a gigantic project which has seemed too ambitious even for modern numismatists.



Fig. 12.—GUILLAUME BUDÉ (1467–1540), Director of the Bibliothèque Nationale, Paris (photo courtesy Bibliothèque Nationale).

In Italy Fulvio Orsini (Fulvius Ursinus), called the "father of ancient iconography," gained a wide reputation not only through his treatise on ancient portraits, *Imagines et elogia virorum illustrium et eruditorum ex antiquis lapidibus et numismatibus expressa* (1570), but also through his large collection of coins, manuscripts, and books, and through his exceptional ability to detect false coins. His correspondence and travels brought him into contact with scholars and collectors in many countries, who, in turn, approached him on numerous occasions for his opinion as to the authenticity of certain pieces.

Portugal, during the 15th century, produced an outstanding collector in the person of Don Alfonso of Portugal Count of Ourém (d. 1460) and grandson of King John I. He collected many antiquities during his travels to Italy and Germany. His example was followed by King Manuel I (1495–1521), who possessed, according to *Livro da Receipta*—an “inventory” of the time—many precious objects which included gold, silver, and copper coins. In the early 1600’s Don Alfonso, Bishop of Evora, published the first Portuguese work on numismatics, *Tractatus de numismate*, which, unfortunately, has not survived.⁵⁹ Interest in serious scholarly work in Portugal also is attested to by the translation in 1535 into Portuguese of Guillaume Budé’s *De asse et partibus ejus*.

In Holland a treatise of Erasem van Houwelingens, *Pemningboek* (1597), became the basis for later studies on the historical significance of Dutch coins. The noteworthy fact in this instance is that a scholar turned his attention to the coins of his own time and country.

Greater progress was made, however, in the field of Roman numismatics. The names of the German doctor and humanist Adolph Oeco (1524–1606) from Augsburg and of the Dutch scholar Hubert Goltzius (1526–1583)⁶⁰ became landmarks in the evolution of numismatics into a science. Oeco in his publication *Imperatorum Romanorum numismata a Pompejo Magno ad Heraclium* (1579) abandons the grouping of Roman coins by metal and adopts, instead, a chronological classification. Goltzius’ tractate on Roman coins, published in several parts in Antwerp and Brussels (1557–1579) and generally known under the title of the 1708 edition, *De re nummaria antiqua opera quae extant universa quinque voluminibus comprehensa*, became the standard reference for Roman coins for over two centuries. It was a major step in the development of numismatic science.

One of the factors which contributed to the excellence of Goltzius’ work was the wide knowledge which he had acquired through the study of many collections. In order to assemble the necessary information, he traveled extensively and visited many coin cabinets throughout Europe. It is amazing to read the list of these collections: 380 in Italy, over

200 in France, a like number in Holland, 100 in Germany. Outstanding personalities of the coin cabinet affairs and the names of the highest authorities were represented on the list. In the words of a coin-cabinet commentator, Binard de La Bastille, “there was no prince nor lord who did not pride himself in owning coins, although there still were many among them who could not even read.”⁶¹

Under such circumstances, coins ceased to be merely historical documents sought by dedicated scholars in their quest for new evidence and became objects of value and curiosity: conversation pieces, art in miniature, unusual adornments (for vases, coffers, furniture), jewels, luxuries, or, as Babelon said, “une mode de bon ton.”⁶²

In Augsburg, during the 16th century, the wealthy banker Hans Jakob Fugger owned, in addition to a famous library and precious manuscripts, a coin cabinet which was rich in ancient gold and silver coins purchased mostly in Italy by the antiquarian Jacobus de Strada of Mantua (d.1588). Author of a famous work on Roman coins, *Eptome the sancti antiquitatum* (1553), translated into French by Jean Louveau,⁶³ de Strada acted for many years as a purchasing agent for the emperors Ferdinand I, Maximilian II, and Rudolph II. Other well-known collectors of Roman coins in Augsburg were Dr. Adolph Oeco, mentioned above, and Dr. Thomannus. The wealthy German city of Nuremberg contained the famous art and coin collections of Christoph Friedrich Imhof and Paulus Praun.⁶⁴

In 1571 the library and the coin cabinet of Hans Fugger were bought by Albrecht the Magnanimous of Bavaria, founder of the “Kunstkammer” in Munich. The Dutch doctor Samuel von Quicquelberg, who organized, at Albrecht’s orders, the Munich collections, also mentions coins as collector’s items in his treatise *Theatrum sapientiae* (1665), a book devoted to such “Raritätenkammern.” The Munich collection increased considerably during the reigns of Wilhelm V (1579–1597) and Maximilian I (1597–1651) and eventually became one of the outstanding coin cabinets in Central Europe,⁶⁵ surpassing the collections of

⁵⁹ BABELON, *Tr.*, vol. I, col. 103.

⁶⁰ *Ibid.*, col. 89.

⁶¹ *Eptome the sancti antiquitatum*, trans. J. Louveau, *Les médailles des empereurs romains*, Paris, 1553, pp. 111–112.

⁶² See GOLTZIUS, *op. cit.*, pp. 162–167.

⁶³ See RIGGAUER, *Gesch. der Münzkabinete*, Munich, 1931, I, 109–110; BRESHAUER, “Geschichte der Staatlichen Münzkabinete,” (1931).

⁵⁹ BATALHA REIS, “O primeiro tratado” (1953) and *Catálogo da numismática*, vol. I, p. 53; LITE DE VASCONCELLOS, *Da numismática em Portugal* (1923).

⁶⁰ For further information, see WEH, “Zur Geschichte des Studiums der Numismatik,” pp. 252–253; DEBAND, *Médailles et jetons*, pp. 80–81, 146–147.



Fig. 13.—JACOBUS DE STRADA (1505–1588). Italian antiquarian, in a painting by Titian (photo courtesy Kunsthistorisches Museum, Vienna).

the Saxon Princes in Dresden (which were inventoried by Tobias Bentel in 1587) and those of the Dukes of Gottorp in Kassel.

In Brandenburg, according to tradition, the Prince Elector Joachim II (1535–1571) established the Berlin numismatic cabinet, which was later enlarged considerably under Frederick the Great.⁶⁶ It is possible that such cultural preoccupation at Joachim's court was stimulated by Count Rochus Guerini, an architect who came from Florence via Paris.

In Italy, especially in Rome and Florence, coin collections were to be found in the palaces of the nobility: the Farneses, the Barberinis, the Massimis, and the Ottobonis. Equally famous were the collections assembled by nephews of the popes: Antonio Condulmerio, Cardinal of St. Mark's; Alessandro

⁶⁶ FRIEDLÄNDER and SALLUT, *Das königliche Münzkabinett*, pp. 12–18; MENADIER, *Die Schatzsammlung*, p. 1.

Cardinal Farnese; and Filippo Cardinal Buoncompagni.⁶⁷ The well-known scholar and maecenas Fulvio Orsini (1529–1600), at his death, left 70 gold, 1,900 silver, and over 500 bronze coins, the majority of which he bequeathed to Odoardo Cardinal Farnese. Pope Urban VIII in 1628 made a gift of 600 silver coins to his nephew Francesco Cardinal Barberini. The beginnings of the numismatic collection of the Vatican can also be traced to this period—about 1555—during the Pontificate of Marcellus II.⁶⁸

In Spain, through Philip II (1556–1598), a noted art lover, many collections were brought to the Escorial,⁶⁹ among them the coins of Antonio Agustín, Bishop of Lerida and Archbishop of Tarragona, considered by many as the father of Spanish numismatics.⁷⁰ His fame was based on his work *Diálogos de medallas, inscripciones y otras antigüedades*, published by Felipe Mey in Tarragona in 1587 and translated a few years later into Italian—*I discorsi del S. Don Antonio Agostini sopra le medaglie et altre anticaglie* (1592).

A Dutch scholar, Abraham van Goorle (1549–1609), author of a treatise on Roman coins—*Thesaurus numismatum romanorum sive nummi ad familias romanas spectantes* (1605)—assembled a collection of 4,000 gold, 10,000 silver, and over 15,000 bronze coins. These eventually came into the hands of Charles I of England. The famous “Juxon Medal” handed over to the Archbishop by Charles on the scaffold is often mentioned as evidence of the King's fondness for rare coins. His collection, after many peregrinations during the civil wars, ended up in Sweden in Queen Christina's cabinet.

In France the coin collection which Catherine de Médicis (1519–1589), wife of Henry II of France, brought with her from Italy met a similar fate: these coins, inherited by her son Charles of France (1560–1574), were scattered during the religious wars. Within a few decades, however, an even better collection was assembled by King Henry IV (1589–1610). A French gentleman, Pierre Antoine de Bagarris, was assigned the task of acquiring coins for the royal collection, which was eventually to become the famous Paris coin cabinet.

⁶⁷ For the history of the Vatican collections, see SERAFINI, *Le monete del Medagliere Vaticano*, vol. I, introd.

⁶⁸ *Ibid.*, pp. XV–XVII.

⁶⁹ GARCIA DE LA FUENTE, *Biblioteca de San Lorenzo de el Escorial* (1935).

⁷⁰ For the collection of Father Agustín, see MATEU Y LIOPIS, “Un inventari numismatic del segle XVI” (1929–1932); for the life of Father Agustín, see LOPEZ, “Iconografia di Antonio Agustín” (1952), and RIVERO, *Don Antonio Agustín* (1945).



Fig. 14.—JEAN VARIN showing a medal to Louis XIV in a painting by François Lemaire (2) (author's photo).

An interesting passage in Bagarris' report to Henry IV—in which he narrates the history of the collection of Catherine de Médicis—states that, in France, the “great king Francis [Francis I], Henry II, the other subsequent kings and queens, their wives and mothers and grand princes,” and, in Italy, the princes and lords, especially the Medicis, owned important coin collections. Apparently it was unnecessary to convince the king of such importance because Henry IV himself stated that he wanted a collection “to embellish the royal residence, to assist the Crown Prince in his education, and to offer to contemporary artists good examples to imitate.”⁷¹ This princely educa-

tion can be seen in a contemporary painting, of his grandson, the young Louis XIV, admiring a medal which Jean Varin, the director of the Paris mint, is showing him (fig. 14).

Undoubtedly, coins and especially ancient coins did present a special interest to artists. To note just one example, Peter Paul Rubens, the great Flemish painter, is known to have bought a collection of 18,000 coins, which he later resold.

The earliest known coin auction took place in Leiden toward the end of the 16th century, when the collection of a French gentleman was sold in this manner in 1598.

⁷¹ BABELON, *Traité*, vol. 1, col. 120.

SEVENTEENTH CENTURY

The enormous upsurge which occurred in numismatics during the 16th century—illustrated here through only a few salient examples—continued to increase steadily during the 17th century. As a science, numismatics had outgrown its childhood. The sometimes naive approach of the early 1500s, with their fictitious representations, tended now to be replaced. Broader knowledge of numismatic material available in hundreds of collections in every civilized country contributed to more mature and exact interpretation. The general tendency during the 17th century was an interest in registering as much unknown material as possible. Thus, the publication of catalogs of collections was given special attention.

Also during the 1600s, the development of most of the famous coin cabinets of Europe took a decisive upward turn. France, through a series of favorable circumstances, became the leading country in this regard. At least two famous collections from this period should be mentioned.

Gaston, Duke of Orleans (d. 1660) and brother of Louis XIII, owned at his residence, the Palais de Luxembourg, an outstanding collection, which he housed in six cabinets. He spared neither effort nor expense to obtain rare pieces from Italy and Greece, and he considered his collection important enough to bequeath to his nephew, Louis XIV. Surprisingly, the Sun King found more than transitory interest in it and, advised by his Finance Minister Colbert, he built the collection into one of the most outstanding coin cabinets in Europe.

Adding it to the cabinet previously set up by Henry IV, Louis increased the collection through continuous acquisitions. He had the cabinet moved into the palace of the Louvre, entrusting it to the care of Pierre de Cracavi, a friend of the philosopher Blaise Pascal. French missionaries and ambassadors in Italy, Greece, and the Orient received special orders from the king to be on the lookout for ancient coins. During this time, serving as his chief agent was Jean Foy Vaillant (1632-1706), a name which was to remain associated with numismatics for centuries. Commissioned by Colbert to search for coins in foreign countries, Vaillant visited Italy, Sicily, Greece, and even Persia and Egypt. Once, bad fortune brought him into the hands of pirates in Algeria: in order to save some gold pieces, he did

not hesitate to swallow them; at least, this is the story he later told a friend.⁷²

Through Vaillant's profound knowledge of the subject and his relentless drive, many interesting coins came into the royal collection. A dedicated scholar, he also published many works on ancient numismatics covering a variety of subjects, from the coins of the Seleucides, Ptolemies, and Arsacides to the popular field of Roman coins.⁷³ The most noteworthy among his publications was *Numismata imperatorum Romanorum praestantiora* (1694).

The French royal collection, thus enriched, became one of the king's favorite pastimes. Because he wanted it always located within his immediate reach, he had the cabinet transferred in 1683 to Versailles. Louis had the habit of visiting his collection daily, devoting much time and enthusiasm to the study of coins. He remarked that he enjoyed doing it because he could always find something new to learn.

To be custodian of the coins, the king hired a Swiss numismatist and engraver André Morell (1646-1705), who was assigned the task of publishing an inventory of the collection. Morell, an exceptionally gifted scholar and an excellent designer, conceived of his work as a general synopsis ("recueil") of all existing ancient coins in European collections. He intended to accompany his descriptions with adequate drawings. This plan, a revival of Lazius' "corpus" idea, was doomed to failure, and Morell never succeeded in fulfilling his dream. Moreover, the treatment which he received in France was not exactly conducive to promoting his work. Twice imprisoned in the Bastille for his religious beliefs, he finally decided to leave the country. When he was asked by the Prince of Schwartzenberg and by the Prince Elector of Brandenburg to arrange their collections, Morell departed in 1691 and spent the rest of his life in Germany.

The major collections of the period find their best descriptions in the prefaces which Vaillant, a contemporary of Morell, added to his voluminous work. In these pages he usually listed the chief cabinets he had consulted during his trips through various countries. From them we can obtain a fairly good idea of numismatics as a hobby in that age. Among

⁷² BABELON, *Traité*, vol. 1, col. 138.

⁷³ See the list of his works in BABELON, *Traité*, vol. 1, col. 142.

the outstanding collections which by now were the cabinet of Queen Christina of Sweden (at that time in Rome), the collection of Alessandro Farnese in Parma,⁷⁴ the collection of the Este in Modena (dating from the late 1400s),⁷⁵ the Savoia cabinet in Turin, the Lavagna Collection in Genoa, and numerous other collections in the Low Countries, Switzerland, Spain, and Germany.

In England, Vaillant studied the collection of James II, who had built his cabinet around a nucleus inherited from his predecessors—among them Oliver Cromwell. Other English cabinets are mentioned by Vaillant, such as the collections of the Duke of Buckingham, Henry Hyde, and Count Arundel. In 1677 the antiquarian Elias Ashmole (1617–1692) laid the foundation at Oxford for a museum that today houses the famous Heberden Coin Room.

Noteworthy royal coin cabinets in other parts of Europe were the collection of the king of Denmark and especially that of Queen Christina of Sweden.

Stimulated by the extensive collection of Ole Worm (d. 1654), rector of Copenhagen University, Frederick III of Denmark assembled a remarkable group of coins, chiefly Roman, which was published by Holger Jacobaeus in 1696.⁷⁶ This group formed the nucleus for the world-famous Royal Collections of Coins and Medals of the Danish National Museum in Copenhagen.⁷⁷

The core of the collection of Queen Christina in Sweden can be traced back to her royal ancestors.⁷⁸ Part of this assemblage of over 15,000 coins (which the Queen took with her after her abdication in 1654) had been started during the 16th century. Some of the

coins collected from her father, others had been given to her by King Christian X of Gothenburg, who paid 10,000 Riksdaler in 1602 for a collection which he presented to Christina in 1637, but most of the coins had come as a gift through the Queen's purchases. During her journey to Rome many pieces were lost and some had to be pawned in Brussels because of her debts. In Rome, where Christina took permanent residence, the coins and the antiquities, to which she added



Fig. 15. MEDAL OF QUEEN CHRISTINA OF SWEDEN (1626–1689) (photo from Bildt).

many important pieces, were accessible to scholars for study at her home the Palazzo Riario alla Lungara. Since the collection was especially strong in the Greek and Roman series, it served as a source of reference for most of the prominent numismatists of that period. At her death, Christina left over 6,000 coins, which passed into the possession of Prince Livio Odescalchi, a nephew of Pope Innocent XI.

About the same time, the Berlin collection of Frederick William I (1640–1688) of Brandenburg, the "Great Elector," was described by contemporaries as "deserving the visit and the attention of all those who cultivate interesting things."⁷⁹ Already in the mid-

⁷⁴ A catalog of the Farnese gold, silver, and copper coins was published in 10 vols. by the Jesuit father PEDRETTI, *Le monete . . .* (1694–1727).

⁷⁵ There is a catalog of the collection made in 1540 by CALCAGNINI.

⁷⁶ See the history of the Copenhagen Royal Coin Cabinet by BREITENSTEIN, pp. 5–15 in part I of Danish Series of *Sellove nummorum Graecorum*; also ROUSSEI, *Danmarks Nationalmuseum*, pp. 18–20.

⁷⁷ For early catalogs of this cabinet, see RAMUS, *Catalogus nummorum veterum graecorum et latinorum* (1816); also the *Beskrivelse over danske mynter og medailler* (1791).

⁷⁸ For Christina's collection, see CAMILLI, *Nummi antiques Christianae reginae* (1690); HAVERKAMP, *Nummophylacium regium* (1742); DURAND, *Médailles et jetons*, pp. 3–41; BUDÉ, *Les médailles romaines de Christine* (1908); GALEFFE, "Die Münzsammlung der Königin Christina von Schweden" (1906). For numismatics in Sweden before 1640, see RASMUSON, "Mynkenskap och myntsamlande i Sverige före årtalning 1640" (1933).

⁷⁹ BALLEU, *Trésor*, vol. I, col. 17. For the history of the cabinet see FRIEDENBERG and SARTI, *Die Münzkabinette in Europa* (1907).

substantially by Frederick's predecessor, George William (1619-1640), this coin cabinet in 1686 absorbed the famous collection of the Rhinegrave Charles Louis. The latter assemblage numbered over 12,000 pieces, of which a catalog had been published in 1685 in Heidelberg by Laurenz Beger. By 1690 the Berlin collection contained over 22,000 coins.

Often mentioned in connection with the Great Elector of Brandenburg is one of the most significant names in the field of numismatics in the 17th century—Ezechiel Spanheim (1629-1710). Swiss by birth, this eminent scholar spent many years in the capitals of Europe. He joined Queen Christina's learned group of friends in Rome and moved in the diplomatic circles of Paris, where for twelve years he was a special envoy (fig. 16) of Frederick William I. His encyclopedic knowledge in history, art, geography, art history—all based on a full mastery of the ancient authors—made him one of the prominent numismatists of his day. His chief publication *Dissertatio*



Fig. 16. EZECHIEL SPANHEIM (1629-1710), Prussian ambassador to Paris and distinguished numismatist (photo courtesy Bibliothèque Nationale, Paris).



Fig. 17.—CHARLES PATIN, famous French coin collector of the 17th century (photo courtesy Bibliothèque Nationale, Paris).

de praestantia et usu numismatum antiquorum (1664) must certainly be considered the work of a master.

From Spanheim's notes on his life at the French court should be quoted a passage which casts vivid light on the way in which numismatics and coin collecting were practiced in Paris in the late 1600s. At the home of the Duke of Aumont, Spanheim would meet with a group which can be designated a coin collectors' club, convening weekly to discuss numismatic problems. "They imposed on themselves the task of illustrating Roman history through inscriptions and ancient coins, and in this connection, describing the life of the emperors by assembling all coins struck under their reign. Every member of the group had to discuss the emperor's life and to lecture on it before the gathering in order to benefit from the advice of those present. . . ." ⁸⁰ Although this was in the full reign of the "siècle des lumières"—that peak of French cultural life when the brilliant conversations of the literary circles, "les salons," of a Mme. de Sevigné, were the model for high society—

⁸⁰ See BABYLON, *Traité*, vol. 1, col. 154.



Fig. 18.—TITLE PAGE from Jobert's *La Science des médailles* (photo courtesy Bibliothèque Nationale, Paris).

it is still impossible to learn of the number of volumes maintained by the members of the Society, and the exacting methods used in their discussion. A challenging enterprise indeed, since it succeeded in captivating for two years a man as learned as Sp. theon.

In order to promote information of a broader nature, certain authors tried to present a synopsis or an introduction to the entire field of numismatics. A German, Tilemann Friese, certainly made a remarkable attempt in this direction in 1592. While the final three books of his *Münz-Spiegel* (Coin Mirror) conventionally presented a description of German coinages, his first book established them within the framework of a general theory of coins—an unusual approach for those times. Along similar lines the Jesuit father Louis Jobert's book on the science of coins, *La science des médailles*, served for nearly two centuries as a first-rate reference work (fig. 18). Published first in Paris in 1692, it was re-edited in 1718 in German, in 1728 in Dutch and Italian, and still later in a very popular French edition by Binard de La Bastille in Paris in 1739.

Even for 17th- and 18th-century man a general conspectus of numismatic publications, as today, was almost impossible. Books and pamphlets of every sort abounded, confusing the untrained person in search of information and rendering serious research for the scholar more and more difficult. As an approach to the problem, bibliographical handbooks which could give a good synopsis of the various specialized publications were compiled during the 1600s. Philipp Labbé's *Bibliotheca Nummaria* (1664) found a follower in B. B. Struyve's *Bibliotheca numismatica antiquorum* (1693); both were extensively enlarged by Johann C. Hirsch's *Bibliotheca numismatica*, published almost a century later, in 1760, at Nuremberg.

EIGHTEENTH CENTURY

With the advent of the 18th century—which produced the great cultural revolutions, the French Encyclopedists, Rousseau and Voltaire, Goethe and Kant—a new spirit penetrated all the sciences. The naive curiosity of the past gave way to a more rigorous approach; the casual treatment of materials, often haphazardly accumulated, was replaced by more methodical arrangements; new fields, heretofore completely disregarded or disdained, came into importance. The ancient ideals which had inspired the

man of the cinquecento faded away in many instances and were replaced by a more immediate interest in contemporary life. The Elizabethan cultural achievement in England and the brilliant rise of French art and literature during the reign of Louis XIV gave people more confidence in their own creations.

Nummatics, as did so many of the other sciences, benefited from this new trend, and new fields were opened for research. The old system of publishing



Fig. 19.—ELIAS BRENNER (1647-1717), father of Swedish numismatics, in a painting by Mikael Dahl (1680) (photo courtesy Kungl. Myntkabinettet, Stockholm).

catalogs of great collections was continued but, at the same time, advanced and more specialized studies were given increased attention. The Middle Ages and the contemporary period furnished novel and attractive subjects.

The late 1600s already had witnessed a strong movement in this direction. In France, François Le Blanc's *Traité historique des monnoys de France* (1690); in Sweden, Elias Brenner's *Thesaurus nummorum Sueco-Gothicorum vetustus* (1691);¹ and in Holland, Pierre Bizot's *Histoire métallique de la République de Hollande* (1687) were all remarkable publications representative of the new trends. Their example was followed in practically every leading country in Europe. In Germany during the 1700s there appeared a cluster of authors who treated numismatic problems from the standpoint of individual principalities. An outstand-

¹ STRÖMBOM, "Elias Brenner i unga år" (1947); HÖGBERG, "Elias Brenner." (1955).

ing writer among them was Wilhelm Ernst Tentzel (1659-1707), whose *Saxonia numismatica*, published in four volumes from 1705 to 1714, is still considered a standard reference for Saxon coinages.

A few names, among the many remarkable writers of the 18th century, include: in Switzerland, Gottlieb Emanuel von Haller, author of a work on Swiss coins (*Schweizerisches Münz- und Medaillenkabinet*, 1780-1781); in Spain, Enrique Flórez (*Medallas de las colonias*, 1757-1773); in Italy, Guido Antonio Zanetti (*Nuova raccolta delle monete e zecche d'Italia*, 1775-1789), Prince Gabriele Torremuzza, author of a classic study on the ancient coins of Sicily (*Siciliae populorum et urbium*, 1781), Francesco de' Ficoroni (*Piombi antichi*,

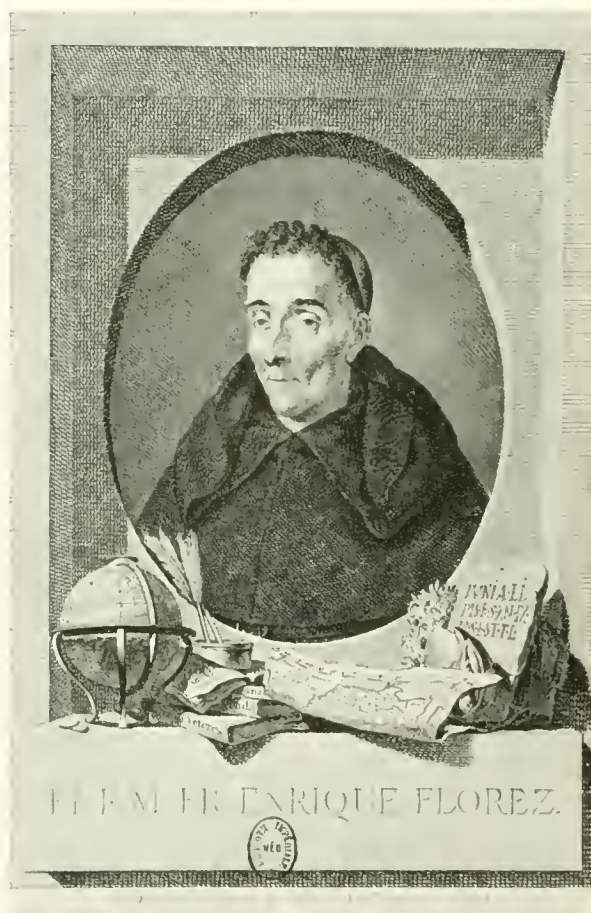


Fig. 20.—ENRIQUE FLÓREZ (1702-1773), Spanish numismatist (photo courtesy Bibliothèque Nationale, Paris).

1740), and Lodovico Antonio Muratori, who initiated the study of medieval Italian numismatics (*De diversis pecuniarum generibus*, 1738); in France, Nicolas Mahudel⁸³ (*Dissertation historique sur les monnoyes antiques d'Espagne*, 1725), Joseph Pellerin⁸⁴ (*Recueil de médailles de rois*, 1762, and *Recueil de médailles de peuples et de villes*, 1763); and in England, Stephen M. Leake (*Nummi britannici historia*, 1726).

In order to be able to master the continuously growing bulk of contemporary material, with its never-ending number of coins which must be registered, classified, and studied, a new and more adequate system than the alphabetical or chronological arrangement had to be found. The answer to the problem came from the meticulous and systematic minds of the German numismatists, who, during this century, undoubtedly became the leaders in numismatic research.

Since Germany itself presented a rather entangled picture with its numerous principalities, archbishoprics, bishoprics, cities, and even abbeys—all of them issuing coins—any attempt to give a general numismatic history of this country seemed to be an impossible enterprise. A division of numismatic material by coin denominations simplified the task considerably, permitting topics often to expand geographically by including similar coin denominations of other countries. As a result, a group of publications appeared in Germany which presented fairly complete catalogs of specific categories of coins. Johann Friedrich Joachim's *Neu eröffnetes Groschen-Cabinet* (1749–1769), on German and other small denominations, Johann Tobias Köhler's *Vollständiges Ducaten-Cabinet* (1759–1760), and later J. C. von Soothe's *Auserlesenes und höchst anschauliches Ducaten-Cabinet* (1784), became major references on European gold coins. Michael Lilienthal's *Vollständiges Thaler-Cabinet* (1735), and especially David Samuel Madai's *Vollständiges Thaler-Cabinet* (1765–1774), which included practically all dollar-sized silver coins of Germany and neighboring countries, are excellent reference books still used extensively at the present time.

During the same period, various numismatic dictionaries were published for the purpose of helping collectors become more familiar with the basic

concepts and terminology of the science. Dictionaries mentioned, among others, are Johann Christian Rasche's *Lexicon numismatico-terminologicum* (1805), in 2 volumes, with a supplement in 1802 (1806), in Leipzig; and the work of the Spanish numismatist Tomás Andrés de Gussemé, *Diccionario numismatico general*, which was published in six volumes (1771–1777) in Madrid.



Fig. 21. DAVID SAMUEL MADAI (1700–1780), German numismatist (Div. of Numismatics photo).

The early years of the 18th century also saw the recognition of numismatics as an academic discipline. In 1738 Professor Johann Heinrich Schulze announced a *collegium privatim* at the University of Halle, Saxony, lecturing *über die Münzwissenschaft und die daraus zu erlauternden griechischen und römischen Privatmünzen* (on the science of numismatics as a source for Roman and Greek antiquities).⁸⁵ This course was published later (Halle, 1766) in book form.

From 1729 to 1750, Professor Johann David Köhler of Altdorf published weekly commentaries and historical explanations on national and foreign coins and medals in a series he called *Historische Münz-Belustigung* (Historical Coin Amusement). Precursors in the late 17th century were Leitzel's

⁸³ For a biography of Muratori, see LUZZI, "Vite di illustri numismatici italiani: Lodovico Antonio Muratori" (1889).

⁸⁴ A list of his works is in BABINGTON, *Traté*, vol. 1, col. 172.

⁸⁵ A list of his publications is in BABINGTON, *Traté*, vol. 1, cols. 176–177.

⁸⁶ Köhler, "Aus der Geschichte der Kolophonien" (1741).



Fig. 22. FRONTISPICE AND TITLE PAGE from the early numismatic periodical *Historische Münz-Belustigung*, published by J. D. Köhler (Div. of Numismatics photo).

Monatliche Unterredungen (Leipzig, 1689-1698) and the *Historische Remarques der neuesten Sachen in Europa* (Hamburg, 1699-1705). Adorned with artistic engravings of coin and medal designs, Köhler's publication is a real treasure chest of information, and even today it constitutes delightful reading for the numismatist and historian (fig. 22). The two-volume index, compiled by Johann Gottfried Bernhold in 1764-1765, contains a complete key to the 22 volumes. Köhler's "periodical" stimulated many imitators in Nuremberg as well as other places.⁶⁷

A survey of numismatics during the 18th century would be incomplete without mentioning the noted Austrians, Joseph Eckhel and Joseph von Mader.

⁶⁷For further information, see FUSCHIN VON EPENGRUTH, *Wiener Münzkunde*, p. 12.

Johann David Köhlers/ P. P.
Im Jahr 1729. wöchentlich herausgegebener
Historischer
Münz-Belustigung
Erster Theil,

Darinnen
allerhand merkwürdige und rare
Thaler/ Ducaten/ Schaustücken/ Klippen
und
andere sonderbare Gold- und Silber- Münzen
von mancherley Alter, zusammen LXIV. Stücke,
Accurat in Kupfer gestochen, beschrieben und aus der Historie
umständlich erkåret werden.

Einer Vorrede von Joh. Luckii *Sylogæ Numismatum*
und einem
Zweysfachen Register.



Nürnberg/
Bey Christoph Weigels des ältern Kunsthändlers seel.
Wittwe.
Gedruckt bey Lorenz Bisling, 1729.

The Abbot Joseph Hilarius Eckhel (1737-1798),⁶⁸ who was director of the Imperial Coin Cabinet in Vienna and, at the same time, taught classical archeology at the University, devoted his entire life to the study of ancient coins. No one more deserves the title of "father of ancient numismatics." On the basis of his principles—applied in the arrangement of his major work, *Doctrina nummorum veterum*, published in eight volumes between 1792-1798 in Vienna—rests the subsequent organization of the entire field of ancient numismatics.

A merciless critical faculty which weeded out faulty interpretations and apocryphal data, a brilliant ca-

⁶⁸For a biography of Eckhel, see KESSER in *Allgemeine deutsche Biographie*, vol. 5; FRANKE in *Neue deutsche Biographie*, vol. 4; see also BERGMANN, "Pfleger der Numismatik in Österreich" (1857); DURAND, *Méailles et jetons*, pp. 60-64.



Fig. 23.—THE AUSTRIAN ABBOT Joseph Hilarius Eckhel (1737-1798), father of ancient numismatics (photo courtesy Kunsthistorisches Museum, Vienna).

capacity for synthesis which visualized the general outlines of ancient coinage in its magnitude, a methodical mind which established the basic principles on which to build a flawless scientific arrangement—these are Eckhel's outstanding characteristics. With him began a new era in the study of ancient numismatics: rigid scientific methods entered the field of research, supplanting the casual approach of the amateur with his haphazard search for answers.

"Prolegomena generalia," the first 24 chapters of volume one in his *Doctrina nummorum*, can be considered a basic introduction to numismatics. For the first time in its history the basic elements of ancient Greek and Roman numismatics—metals, ponderal systems, organization of mints, significance of coin-types, coins in their relation to the history of art—are amply discussed. In dealing with ancient Greek numismatics (in the first four volumes of his work), Eckhel adopted a geographical arrangement instead of the alphabetical grouping generally in use up to his

time. This system, previously advocated by the French collector and scholar Joseph Pellerin, but never worked out in detail, remains the foundation of Greek numismatics to the present day. Modern scholars also follow Eckhel in other respects: many of his findings or attributions have never been questioned. In the field of Roman numismatics, to which he devoted the last four volumes of his *Doctrina nummorum*, Eckhel systematized an immense treasure house of information, setting up a scientific, chronological sequence of coin issues in a basic arrangement which has not essentially altered during a hundred and fifty years of numismatic work.

Although his fame cannot compare with Eckhel's, Joseph von Mader⁸⁸ (1754-1815), professor at the University of Prague, must be considered equally a pioneer in his own field. He succeeded in putting onto a scientific basis medieval numismatics, which until then had not progressed beyond the preparatory phase of random listings. His "essays" on bracteates, *Versuch über die Bracteaten* (1799), *Zweiter Versuch über die Bracteaten* (1809), and especially his six-volume *Kritische Beiträge zur Münzkunde des Mittelalters* (1803-1813) changed the basic approach to this field of study.

FAMOUS COLLECTIONS OF THE CENTURY

At this point a brief survey of the major cabinets in Europe during the 18th century will disclose not only information about the growth of important museum collections but also facts about numismatics as a favorite pastime of the intellectual elite.

It is only natural that Italy, the perpetual source of antiquities, should account for some of the outstanding collections of coins. Here, as in other leading countries of Europe, countless personages of renown in the social pages or in the world of letters and science, collected, exhibited, studied, and discussed coins. A deeply felt love for art and art objects and a genuine understanding for historical and scientific problems inspired Italian collectors. The dukes of Tuscany⁸⁹ and the princely families, the Chigi, the Colonna, the Barberini, the Pamphili, all had their art treasures. Names such as Prince Livio Odescalchi, Cardinal Massimi, Cardinal Albani, Prince Borghese, Prince

⁸⁸ BARTON, *Italy*, vol. 1, cols. 176-177.

⁸⁹ BRUGNASS, "Pflöge der Numismatik in Österreich" (1894), p. 33.

⁹⁰ GORI, *Antiquaria numismatica . . . in Roma throno e Museo Diocesano et Vaticana* (1740).

Torremuzza, Monsignor Stefano Borgia, Ferdinando Gospi of Bologna, Manfredo Settala of Milan, Geronimo Correr, and Honorio Arigoni of Venice,⁹¹ are only a few among an impressive group of people who were moved for various reasons to treasure coins. Many of their collections—varied or highly specialized, modest or excessively wealthy—have disappeared, their treasures scattered without a trace. Others were transmitted practically untouched to later generations, their records in perfect order. As a result, many famous pieces today can be traced to their original ownership, some as far back as two centuries.

Of special interest is the history of the Vatican Coin Cabinet. After a slow start during the 16th and 17th centuries, the development of the cabinet took an unexpected turn upward in the late 1700's. Pope Clement XII (1730-1740) envisioned an outstanding museum which would give artists and visitors to Rome occasion to see great works of art. As part of the collections he visualized also a group of Roman coins. Accordingly, in 1738 he bought from Alessandro Cardinal Albani a remarkable group of 328 Greek and Roman coins and medallions, paying the impressive sum of 11,000 scudi.⁹² These coins, highly regarded by his contemporaries, were housed in the north wing of the newly constructed papal library; they formed substantially the nucleus of the Vatican Coin Cabinet. His successors, especially Benedict XIV (1740-1758), Clement XIV (1769-1774), and Pius VI (1775-1799), spared neither efforts nor money to add new treasures. In addition to the Roman coins and the rare medallions in which this collection was remarkably rich, a very good representative series of the Roman popes was added.

Pius VI surpassed his predecessors in enriching the Vatican Coin Cabinet. In 1794 he bought for 20,000 scudi the famous cabinet of Queen Christina of Sweden, a collection by then in the possession of the Odescalchi family. Within the short span of a few decades the popes succeeded in bringing their collection to the highest level, equal almost to the Paris Royal Cabinet. Unfortunately, within a few years many of these exceedingly rare pieces were scattered forever by a turn in history.

In 1799, during the French occupation of Rome, innumerable coins were seized by individual soldiers

of the French revolutionary army. Only a part of the original Vatican Cabinet could be transported to Paris according to the plans of the *Directoire* in Paris. Count Camillo Serafini gives a detailed account of these events and concludes the story of the regrettable happenings with the observation that "it could be truly said that the cabinet did not exist anymore."⁹³ The Vatican collections, however, were rebuilt in later years.

It was only natural during this period of enlightenment, when art and science were benefiting greatly from the impulses emanating from France, that most of the potentates of Europe would pay attention to one of the most intellectual of aristocratic pastimes. Indeed, Frederick the Great of Prussia, Louis XV of France, Maria Theresa of Austria, her husband Charles VI, Duke Anthon Günther of Schwarzenberg, and Frederick II of Saxe-Gotha competed among themselves for the acquisition of entire collections or of famous single pieces. Charles VI carried his numismatic fervor so far that he did not want to be separated even during military campaigns from some of his favorite coins. Accordingly, he had a portable coin case made which accompanied him on to the battlefields of Spain.

This period holds a special importance for the growth of the Vienna Coin Cabinet, which by 1663 numbered over 15,900 pieces. Numismatics was cultivated at the Viennese court during the reign especially of Joseph I, Charles' older brother. In 1709 the emperor brought the Swedish scholar Carl Gustav Heraeus (1671-1725) from the court of the Princes of Schwarzenberg. After Joseph's death in 1711, Heraeus continued his services with Charles VI, who entrusted him with the task of integrating the rather scattered coin holdings of the Viennese "Schatzkammer."⁹⁴ Heraeus not only organized the Vienna coin cabinet but also substantially increased its treasures. Enjoying the financial and moral support of the numismatically inclined emperor, Heraeus purchased many rarities on his numerous travels. In 1713 he added to the Vienna Cabinet 1,200 select pieces from the Ambras collection in the Tyrol. About the same time, the scholarly dissertations on ancient coins by Father Erasmus Froehlich (1700-1758),⁹⁵ librarian and professor of archeology, added

⁹¹ *Annales . . . Musei Honorii Arigoni Veneti ad usum juventutis romanarum studiorum* (1741).

⁹² VESPELI, *De specie numismata . . . ex museo Alexandri S.R.F. Card. Albani in Vaticani Bibliothecam . . .* (1739-1744).

⁹³ *Monete del Medagliere Vaticano*, vol. I, pp. L-LI.

⁹⁴ BRGMANN, "Pfleger der Numismatik in Österreich" (1856), pp. 32-34.

⁹⁵ For a bibliography of his works, see BABELON, *Traité*, vol. I, cols. 169-170.



Fig. 24.—“CABINET LOUIS XV” at the Cabinet des Médailles in Paris (photo courtesy Bibliothèque Nationale).

to the prestige of Austrian numismatics. Another collection of repute, during the reign of Charles VI, was the coin cabinet of Apostolo Zeno of Venice, historian to the Emperor. This famous collection of ancient Greek and Roman coins passed in 1747 to the monastery of St. Florian in Upper Austria, where it remained for over two hundred years until it was sold at auction in Vienna after World War II. During the Napoleonic era, the Austrian chancellor Metternich built a comprehensive collection of coins and medals in his Königsberg Castle.

In France, Louis XV continued only half heartedly the interest which the Sun King had shown for coins. After 1720 the royal cabinet⁹⁰ was transferred from

Versailles to Paris and set up in a lavish arrangement in the library of the king in the ancient palace of the Marquise de Lambert, where it can be seen in its original setting to this day (figs. 24, 25).

The little principality of Saxe-Gotha could claim an important collection which had been assembled by its princes (fig. 26). Frederick II (1691-1732) proclaimed that he created this cabinet “for the reputation of Our Princely House, and for the good of the public.”⁹¹

Among the instructions given in 1711 by his successor Frederick III to Prof. Schläeger, curator of the collection, the following secus perfectly to define curatorial duties: “The curator is supposed to show

⁹⁰ J. BABELON, *Les trésors du Cabinet des antiques* (1927); see also *Cabinet des médailles . . . guide du visiteur* (1924; 1929).

⁹¹ Peck, “Die Münzkabinette” (1920); see also the contemporary catalog of Lamm, *Gotha numismata* (1730).



Fig. 25.— COIN CABINET of the time of Louis XV, preserved at the Cabinet des Médailles, Paris (photo courtesy Bibliothèque Nationale).

the collections in a courteous manner, without asking for any remunerations, to all strangers who can view them profitably; he should also entertain them with helpful lectures and bring forward everything which he knows is in Our intention and what he might consider of interest to the public.”⁹⁸

It is interesting to note that already at this time Germans were anxious to give general directives to collectors. In 1762 Johann David Köhler published, for travelers and scientists, instructions on profitably viewing coin cabinets, galleries, etc.: *Anweisung für Reisende . . . Münz-Cabinette . . . mit Nutzen zu besehen* (1762). Neickel in his handbook on museums also

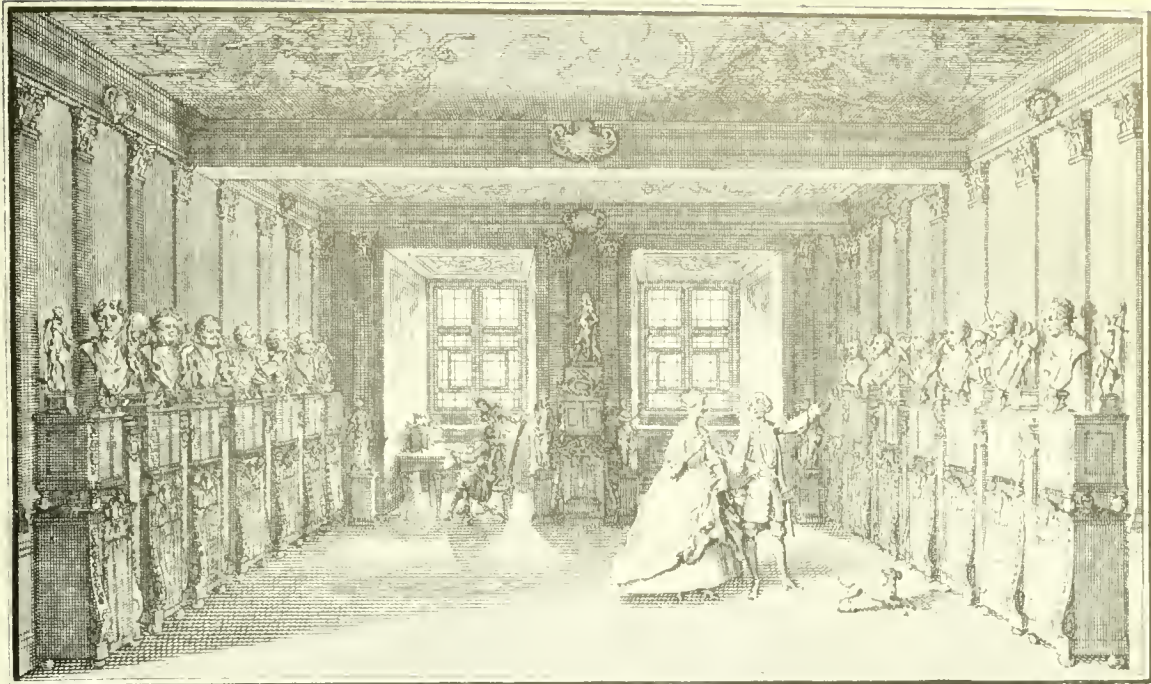
⁹⁸ Pick, “Die Münzkabinette” (1920); see also his *Das Herz der Münzkabinette* (1933).

tried to define a triple scope in coin collecting. He advised collectors to gather only “genuine originals,” avoiding copies, to select specimens of perfect striking, and, as the ultimate goal, to assemble coins and medals in such a manner that they could tell a story.⁹⁹

Across the Channel, the first catalog of the British Museum’s collection was published by an Italian, Nicola Francesco Haym, under the title *Del tesoro britannico* (1719–1720). This two-volume work appeared at the same time in Latin and English, as well as Italian.

A few decades later the British cabinet was enlarged considerably by the addition of the collection of Sir Hans Sloane, an Irish physician to Queen Anne and King George I. The collection of over 32,000 pieces

⁹⁹ NEICKELIO, *Museographia*, p. 3.



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Fig. 26.—THE COIN CABINET of Frederick II (1691–1732) of Saxe-Gotha (photo courtesy Bibliothèque Nationale).



FIG. 27.—SIR HANS SLOANE (1660–1753), famous Irish coin collector, and Dr. William Hunter (1713–1783), founder of the coin cabinet at the University of Glasgow (drawings from Durand).

was added to an earlier bequest from Sir Robert Cotton which had been donated to the state in 1710. Both formed the nucleus of what was to become the most famous coin collection in the world.¹⁰⁰ This collection and others, such as the substantial bequest

of Dr. William Hunter to the University of Glasgow¹⁰¹ or the coins of Dr. Richard Mead (which were listed in a sale catalog, *Museum Meadianum*, 1755), of John Swinton, and of Horace Walpole, helped place England among the leading nations in numismatics.

EARLY NINETEENTH CENTURY

The turbulence and insecurity created by the French Revolution and the Napoleonic wars left little leisure and understanding for any kind of diversion, and, as a result, coin collecting declined for a brief period of the new century in many European countries. Yet, from this dormant situation an awakening soon came, generated in France by Napoleon's own grandiose plans. Deliberate pursuit of ancient ideals and art concepts, as conveyed in the art of David and Canova, combined with a strong feeling for national grandeur, found expression in innumerable medals which were struck during Napoleon's time.

Numismatic literature in the subsequent years clearly reflected these tendencies. Two imposing works of French medallic art, Michel Hennin's two-volume *Histoire numismatique de la révolution française* (1826) and the twenty-volume *Trésor de numismatique et de glyptique* (1834-1858), both devoted largely to the Revolution and to Napoleon, were published within these decades. Related to such works was Gerard van Loon's *Histoire métallique des XVII provinces des Pays-Bas*, which had been published almost a century earlier (1732-1737) and now was reedited in the early 1800s.

A remarkable figure in numismatics at the turn of the century was the Frenchman Theodore-Edme Mionnet (1770-1842), who joined the *Cabinet des Médailles* in 1795. Strongly influenced by the classical tendencies of his age, he pursued ideals of disseminating knowledge of ancient coins among wider circles as well as assisting artists in their work by giving them the opportunity to obtain relief reproductions of artistic coins. His sulphur-paste copies of the latter found a wide acceptance; at the same time, he published descriptions of the type, history, and rarity of these coins. Eventually the publications grew into a considerable work, *Description des médailles antiques grecques et romaines avec leur degré de rareté et leur estima-*



Fig. 28.—THEODORE-EDME MIONNET (1770-1842) of the Cabinet des Médailles, Paris (photo courtesy Bibliothèque Nationale).

tion, published between 1806 and 1813 in six volumes with an additional volume of plates. The *Supplément*, in nine volumes, was issued between 1819 and 1837. In this largest publication (up to that time) on Greek coins, Mionnet succeeded in describing over 52,000 pieces. Although the work is not flawless and its scholarly standards are lowered by a continuous preoccupation with establishing the commercial value of coins, it still remains, through its wealth of information, an invaluable reference.

Mionnet's contemporary, the Italian Abbot Domenico Sestini (1750-1832), a well-known traveler

¹⁰⁰ MATHINGLY, "British Museum" (1949); WALKER, "Early History of Department of Coins and Medals" (1953); BOUTON, *The Romance of the British Museum*, (n.d.).

¹⁰¹ For the history of the Glasgow collections, see MACDONALD's catalog *Greek Coins in the Hunterian Collection*, vol. 1, pp. ix-lxvi; for an earlier catalog, see COMBE, *Nummorum veterum* (1782).

and naturalist from Florence, published, among many titles, catalogs of various coin collections which he had visited during his travels, such as *Lettere e dissertazioni numismatiche* (1813–1820) and *Descrizioni d'alcune medaglie greche* (1822–1829). Although his numerous works do not achieve the high standard of Eckhel's publications, they remain useful to present-day numismatists.¹⁰²

The trend toward publishing catalogs of large private and public collections became more widespread. For the beginning of the century we should note a few significant publications in this field, such as Taylor Combe's catalog of the British Museum collection, *Veterum populorum et regum numi qui in Museo Britannico adservantur* (1814), and especially Christian Ramus' catalog of the Copenhagen collection, published in two volumes, *Catalogus numorum veterum Graecorum et Latinorum musci regis Daniae* (1816). In addition, Louis Haller published in 1829 in Bern the catalog of the numismatic collection of the Bern museum: *Catalogus numismatum veterum, Graecorum et Latinorum . . . quae extant in musco civitatis Bernensis*.

While the growth of many public collections in central Europe was hindered by wars and revolutions, Italy, and especially southern Italy, succeeded in increasing the number of its collections. The coin cabinet of Naples,¹⁰³ formed in 1757, grew rapidly—due in part to the archeological excavations in the surroundings of Naples—to an inventory of about 10,000 Greek and over 16,000 Roman coins. In the same city at the same time the Santangelo Collection could claim an equal number of ancient coins. In 1865 this collection was purchased by the city of Naples and added to its own coin cabinet in the national museum. Between 1866 and 1871 the important holdings in ancient and medieval coins of this museum were cataloged by Giuseppe Fiorelli.¹⁰⁴ In numismatics, Naples by this time had developed a great tradition, which has remained unchanged to the present day. Here, in 1808, Francesco Maria Avellino began the publication of a numismatic periodical, *Giornale numismatico*, which followed only a few years behind Friedrich Schlichtegroll's earlier attempt, *Annalen der gesammten Numismatik* (issued in Leipzig and Gotha between 1804 and 1806).

In 1822 Archduke Maximilian donated to the city of Modena from whence the Renaissance cabinet of the Dukes of Este¹⁰⁵ had disappeared a collection which, by 1845, could claim over 35,000 pieces. Venice, with one coin cabinet in the library of St. Mark and another in the Museo Correr, Parma with a coin cabinet founded in 1740, the Brera Collections in the Castel Sforzesco in Milan,¹⁰⁶ large and small public coin collections in Turin,¹⁰⁷ Florence,¹⁰⁸ Padua, Palermo, Catania, and Syracuse, all bear evidence of the tribute generally paid to numismatics in Italy not only by rulers but also by private citizens.

Such interest was no less intense on the Iberian peninsula. Spain possessed a coin cabinet which had been formed in Madrid under King Philip V (1700–1746). By 1716 this collection numbered over 20,000 pieces. It was increased substantially through acquisitions made because of the personal initiative of Ferdinand VI (1746–1759) and especially of Charles III (1759–1788), who was instrumental in bringing many antiquities from Naples to Madrid. The royal collection later was transferred to the Museo Arqueológico in Madrid. Another collection in Madrid, in the Real Academia de la Historia, which had been gathered during the 18th century, two important coin cabinets in Barcelona, one at the University of Valencia, as well as many important private collections—all attest to the importance accorded to numismatics in Spain.

In Portugal, the creation of the Academia Portuguesa da Historia in 1720 designates a new era in Portuguese numismatic research. Under the stimulus of an increased interest in archeological and historical studies, coins were collected and studied more systematically. Many major Portuguese coin collections were formed, or were mentioned as already existing, in the late 1800s. Of such were the Museu Maynense, begun by the Jesuit José Mayne (d. 1792), the collection of the royal palace of Ajuda, mentioned in a Lisbon Almanac for 1795, and especially the Museu da Casa da Moeda, organized in 1777 by a decree from the famous Portuguese statesman Marquis de Pombal. His instructions to the mint to keep one specimen of each issue brought the mint museum into existence. Other collections, especially those pri-

¹⁰² For a list of his works, see BABEYON, *Traité*, vol. I, cols. 195–197; LEITZMANN, *Bibliotheca numaria*, pp. 129–130.

¹⁰³ BRUGLIA, "Le collezioni monetali del Museo Nazionale di Napoli" (1960).

¹⁰⁴ FIORELLI, *Catalogo del Museo Nazionale di Napoli* (1866–1871).

¹⁰⁵ PANVINI ROSATI, "Il riordinamento del Medagliere Estense di Modena" (1956).

¹⁰⁶ BELLONI, "Il Medagliere di Milano al Castello Sforzesco" (1955).

¹⁰⁷ FABRETTI, *Regio Museo di Torino* (1881–1888).

¹⁰⁸ SUPINO, *Il medagliere mediceo* (1899).

taking to classical coins, were formed, probably as educational material, in libraries and universities such as Coimbra and Oporto.¹⁰⁹

In St. Petersburg were the impressive collections of the Hermitage, established during the reign of Catherine II (1762-1796). Earlier, Peter the Great (1689-1725) had been known for his cabinet of antiquities, which included numerous ancient coins and several hundred contemporary medals.¹¹⁰ In his endeavor to raise Russia to the cultural level of other European countries, Peter encouraged the collection of historic and artistic objects. By personal order of the Tsar in January 1722 all Russian coins prior to his reign were to be confiscated from churches, monasteries, and wealthy noblemen and incorporated into the palace collection. (Only the treasures of the Kiev-Petcher monastery remained hidden from Peter; they were discovered in the late nineteenth century.) In 1728, after Peter's death, his collection was deposited for safekeeping with the *Kunstkamer*, where it was added to collections left in earlier years by Russian noblemen, such as the early Russian coins of the boyar Peter S. Saltykov, Governor of Kazan. In 1742 the holdings of over 28,000 coins of the *Kunstkamer* were described in an illustrated catalog written in both Russian and German.

Many other important coin collections were assembled in Russia during the late 18th and early 19th centuries. The well-organized cabinet of Count Andrei I. Osterman (1686-1747), the most famous Russian statesman during the first half of his century, contained, in addition to outstanding Russian rarities, an important series of Chinese coins. This collection was incorporated into the *Kunstkamer* while the cabinet of Count A. P. Volynsk, which included numerous Asiatic and European coins, was given in 1740 to the Academy of Science.¹¹¹

During the middle of the 19th century, a German, Bernard von Koehne (1817-1885), who acted as a curator of the Hermitage, published a journal, *Mémoires de la Société d'Archéologie et de Numismatique de St. Pétersbourg* (1874-1852). His special field of attention was the ancient coinage of the Black Sea region. I. G. Spasskii, in his "Notes on the History of Russian



Fig. 29.—ALEKSANDR DMITRIEVITCH CHERTKOV (1789-1858). Russian numismatist (photo courtesy the Hermitage, Leningrad).

Numismatics"¹¹² asserts that Aleksandr D. Chertkov's earlier work on Russian coins, *Opisanie drevnikh Russkikh monet* (1834-1842), can be considered the first scientific publication in the field of Russian numismatics. In the same period, Baron Stanislav de Chaudoir published a three-volume handbook of Russian coins which is still used, *Aperçu sur les monnaies russes et sur les monnaies étrangères qui ont eu cours en Russie* (1836-1837).

Many rare pieces, especially in the ancient field, were purchased for the Russian cabinets. Large and widely diversified collections, containing local finds of ancient coins from the Greek colonies on the shores of the Black Sea, sprang up in southern Russia. Especially noteworthy were the cabinets in the Odessa

¹⁰⁹ BALABKA REIS, "Musées e coleccões públicas" (1946).

¹¹⁰ See BILIAUX, *Kabinet Petra Velikago* (1800).

¹¹¹ SPASSKII, "Ocherki po istorii russkoï numizmatiki," pp. 40-42, 52.

¹¹² *Ibid.*



Fig. 30.—BARON STANISLAV DE CHAUDOIR (1791-1858), Russian numismatist (photo courtesy the Hermitage, Leningrad).

museum, in Kerch, and at the University of Kiev. Another university collection could be found as far east as Kazan.¹¹³

The early decades of the 19th century can be considered a preparatory phase for the increasingly scientific direction which numismatics took in the later 1800s. More and more, renowned private collections were incorporated, by donation or purchase, into the large collections of the public museums, where they were tended by skilled specialists. From the distinguished ranks of the latter came many of the outstanding contributions to numismatic research. Often associated with learned circles of universities, these men brought into numismatics the accuracy of schol-

arly method—a wide knowledge and the common sense of scientifically trained minds. Due to their influence—even the so-called dilettantes and amateurs in the field were induced to follow more careful methods. This can be seen in the paper published at the top. The trend of channeling numismatic interest along more scientific lines reached its full development toward the end of the century, but its sporadic beginnings had already been registered in the first half of the 1800s.

Usually 1836 is considered a significant date in the development of numismatic science. In that year two periodicals were started which for over a century attracted the most distinguished numismatists of the time and set the highest standards in research. In Paris *Revue numismatique* was founded by Étienne Cartier and Louis de La Sausseye, who intended chiefly to publish articles on Gallic coinages but eventually included ancient and modern numismatics in their program. In London appeared the *Numismatic Journal*; begun by John Yonge Akerman, its name was changed in 1838 to *Numismatic Chronicle*.

Four years later, Belgium followed with the *Revue de la numismatique belge*, founded by R. Chalon, C. Piot, and C. P. Service, a periodical which in 1875 changed its name to *Revue belge de numismatique*.

These three periodicals had, in fact, been preceded by several German publications of a less permanent character. J. Leitzmann's *Numismatische Zeitung* was issued in Weissensee, Thuringia, from 1834 to 1863. Hermann Grote's *Blätter für Münzkunde; Hannoversche numismatische Zeitschrift* was published in Leipzig from 1835 to 1844 and continued as *Münzstudien* from 1857 to 1877. In Berlin, Bernard von Koehne published *Zeitschrift für Münz-, Siegel- und Wappenkunde* from 1841 to 1846 and from 1859 to 1862, it was continued from 1863 to 1873 as *Bolins Blätter für Münz-, Siegel- und Wappenkunde*. Although their pages carried interesting contributions, these earlier German periodicals were of a rather limited influence. The leading German and Austrian revues—*Zeitschrift für Numismatik* and *Numismatische Zeitschrift*—followed within a few years.

Associated with these periodicals were some of the most renowned names in numismatics. In France, which retained its place among the leading nations in the field, there were: Baron Pierre-Philippe Bourlier d'Ailly (1793-1877), whose Roman Republican coins, the largest collection of its kind in existence,¹¹⁴ went to the Paris Cabinet des Médailles.

¹¹³ BÉRISSE, *Cabinet numismatique de l'Université impériale de Casan* (1855).

¹¹⁴ D'AILLY, *Recherches sur la monnaie romaine, de 1793 jusqu'à la mort d'Auguste* (1864-1869).



Fig. 31 — HONORÉ D'ALBERT, DUC DE LUYNES (1802-1867), famous French collector and author (photo courtesy Bibliothèque Nationale, Paris).

Duc Honoré de Luynes (1802-1867), one of the founders of the Institut d'Archéologie in Rome and an outstanding scholar, whose collection of almost 7,000 Greek coins, which he gave to the Paris cabinet, was later published by Jean Babelon;¹¹⁵ Louis Charles, Duc de Blacas, who translated Theodor Mommsen's history of Roman coinage into French between 1865 and 1875; and Henri Cohen (1806-1880), librarian at the Cabinet des Médailles, who produced in his *Médailles impériales* (1859-1868) the most popular handbook on Roman imperial pieces. The latter's simple method of arranging the coins alphabetically by reverse legends under their respective emperors made this catalog very easy to use by a wide public, even to the present day.

By midcentury, France produced scores of collectors and scholars well versed in ancient and medieval numismatics. Félicien de Sauley (1807-1880), author of *Numismatique des croisades* (1847) and of various studies on Byzantine and Gallic numismatics, was also known as a collector; his 7,000 Gallic coins were donated to the Paris Cabinet. Faustin Poey d'Avant, with *Les monnaies féodales de la France*

¹¹⁵ Cf. also: *La collection de Luynes: Monnaies grecques* (1924-1930).

(1858-1862), became the leading authority on the feudal coinage of France; Justin Sabatier (1792-1870), in *Monnaies byzantines* (1862), produced what still is an indispensable work on Byzantine numismatics.

Following similar traditions, but with a special emphasis on medieval and modern times, Belgium and the Netherlands produced names like Constant Antoine Serrure (1835-1898), Raymond C. Serrure (1863-1899), Prosper D. Mailliet (1808-1886) (with the best publication on obsidional coinages, *Catalogue descriptif des monnaies obsidionales et de nécessité*, 1868-1873), Pieter Otto van der Chijs (1802-1867), director of the coin cabinet of the University of Leyden (with his *De munten der Nederlanden*, 1851-1866), and P. Verkade (with a numismatic history of the Netherlands, *Munthoek bevattende de namen en afbeeldingen van munten*, 1848). The coin cabinet in Brussels, founded in 1830, within a few decades claimed outstanding rarities. In the Netherlands the group of coins at the University of Leyden and especially the cabinet in The Hague¹¹⁶ were the major collections.



Fig. 32. PIETER OTTO VAN DER CHIJS (1802-1867), Dutch numismatist and director of the cabinet at the University of Leyden (Div. of Numismatics photo).

¹¹⁶ See the catalog by DOMPIERRI, *Choix de monnaies et médailles* (1910); also GELDER, "Les fonctions externes du Cabinet des Médailles de La Haye" (1957).

In England Reginald S. Poole (1852-1894), keeper of the cabinet in the British Museum, initiated its great series of coin catalogs. At the same time Col. William M. Leake (1777-1860), whose 12,000 Greek coins were purchased by the University of Cambridge in 1864, published the catalog of his collection under the title *Numismata Hellenica* (1856).¹¹⁷ In 1883 Percy Gardner (1846-1937), promoter of studies in art and mythology as related to ancient coins, published *Types of Greek Coins*, a valuable work for the student. Other representative British collectors and scholars of the century were Edward H. Bunbury, Arthur J. Evans, Hyman Montagu (author of an interesting study on more recent coins of England: *The Copper, Tin, and Bronze Coinage and Patterns for Coins of England*, 1893), and especially Rogers Ruding, noted for his earlier publication of documentary material from various archives entitled *Annals of the Coinage of Great Britain* (2nd ed., 1819).

In Denmark the leading name was Ludvig Müller (1809-1891),¹¹⁸ in charge of ancient coins in the Royal Coin Cabinet and author of basic studies on the coinages of Philip II of Macedon, of Alexander the Great (*Numismatique d'Alexander le Grand*, 1855) of Lysimachus, King of Thrace (*Die Münzen des thrakischen Königs Lysimachus*, 1858), and on the numismatics of Carthage and North Africa (*Numismatique de l'ancienne Afrique*, 1860-1874).

In Germany, worth noting among many famous names, are Julius Friedländer (1813-1884), director of the steadily growing coin cabinet in Berlin, Karl Ludwig Grotefend, Alfred von Sallet, Heinrich Dressel,¹¹⁹ Hermann Grote, Emil and Max von Bahrfeldt,¹²⁰ and Johannes Brandis, noteworthy for his metrological studies *Das Münz-, Mass- und Gewichtswesen in Vorderasien bis auf Alexander den Grossen* (1866) which opened the way for the later treatise of Friederich Hultsch (see p. 45).

In Italy there were: Count Bartolomeo Borghesi (1781-1860), epigrapher and numismatist, whose complete works—of which his *Oeuvres numismatiques* (1862-1864) was a part—were published in France under the auspices of Napoleon III; Abbot Celestino Cavedoni, with many publications on ancient numismatics and especially on the coinages of the Roman



Fig. 33. — LUDVIG MÜLLER (1809-1891), Danish numismatist (photo courtesy Kongelige Monetog Medaillesamling, Copenhagen).

Republic; Giuseppe Fiorelli, with the still very useful catalog of the Naples collections; Antonino Salinas, with *Le monete delle antiche città di Sicilia* (1867); and Luigi Sambon, with his still valuable works on southern Italian issues, *Ricerches sur les anciennes monnaies de l'Italie méridionale* (1863) and *Ricerches sur les monnaies de la presqu'île italique* (1870).

In Spain an outstanding name—in addition to the noted A. Campaner y Tuertes and A. Delgado—is Aloís Heiss (1820-1893), author of such standard works on ancient and modern Spanish numismatics

¹¹⁷ See also *Fitzwilliam Museum: Leake and General Collections* (1940-1951).

¹¹⁸ For his biography, see JÖRGENSEN (1891), PICK (1891).

¹¹⁹ For his biography, see FRANK (1959).

¹²⁰ For Grote, see BERGHAUS (1952). For Emil and Max Bahrfeldt, see JLSSE (1953).



Fig. 34. FEDOR FEDOROVICH SCHUBERT (1789-1865), noted Russian collector and author (photo courtesy the Hermitage, Leningrad).

as *Description general de las monedas hispano-cristianas* (1865-1869) and *Description générale des monnaies antiques de l'Espagne* (1870). A still useful reference book which should be mentioned is the huge *Catálogo de la colección de monedas y medallas* (1892), representing the important cabinet of Manuel Vidal Quadras y Ramon.

Most of the basic reference books on Russian numismatics were written during the later part of the 19th century. Fedor Fedorovich Schubert (1789-1865) issued a detailed catalog of his collection in 1857 and republished it later in two separate works: *Monnaies russes des derniers trois siècles* (1857), and *Médailles et médailles russes* (1858). A few decades later, another outstanding collector, Count Ivan Tolstoi, covered the early periods of the Russian principalities in such works as *Drevnisha russkie monety, vobshche i osobno, a kazh skogo* (1882) and *Monety Pskovsku* (1886). The great specialist in ancient and medieval numismatics, Aleksei V. Oreshnikov, produced in *Russkie monety do 1577 goda* (1896) the classic work on early Russian coinages. Chaudoir's *Aperçu*

sur les monnaies russes and Schubert's works (mentioned earlier), published in French, are, even to the present day, the most popular reference books outside of Russia on general Russian numismatics. Because of the language barrier, Christian Giel's compact list *Tablitsy russkikh monet drevkh poslednikh stoletii* (1898) and Ilyin and Tolstoi's publication on Russian coins struck from 1725 to 1801, *Russkie monety chkanomnye s 1725 po 1801 g.* (1910), are referred to only occasionally. The monumental publication of Grand Duke Georgii Mikhailovitch, cousin of Tsar Nicholas II, represents Russia's outstanding contribution to modern numismatics: *Monety tsarstvovaniï* (1888-1914) describes in 12 documented volumes his extensive collection of Russian coins, which cover the period from the reign of Peter the Great to 1890.



Fig. 35. ALEKSEI VASILIEVITICH ORESHNIKOV (1855-1933), famous Russian historian and numismatist (photo courtesy the Hermitage, Leningrad).

Among the prominent numismatists in Poland should be mentioned the great medievalist Joachim Lelewel (1786–1861),¹²¹ who left his homeland after the 1831 Revolution and chose first France and then Belgium as places of asylum. Most significant of his works is *Numismatique du moyen-âge* (1835). His contemporary Edward H. Raczyński (1787–1845), with

a publication on Polish historic medals, *Monnaies de Pologne* (1838), as it appeared under its French title and later Count Lauric Hutten-Czapski (1830–1900) with his large *Catologue de la collection des monnaies polonaises* (1871–1916), helped to establish Poland's prestige in numismatics.

MODERN TRENDS AND ACCOMPLISHMENTS

Since numismatics from the beginning of the 19th century presents such a complex picture, it has seemed more advantageous to view the science in three distinct and consecutive periods: the *early eighteenth-century* (pp. 34–37), a relatively dormant span, still strongly tied to its preceding century, but with a slow, steady awakening; the *mid-century* (pp. 37–41), characterized by a conscious drive toward higher standards, a preparatory interval for subsequent accomplishments; and finally, the *modern era*, which has seen the most advanced work in the history of numismatics. In this last period, the science has followed an unbroken line of evolution, extending from the final quarter of the 19th century to the present day.

While an approach along geographical lines within each historical period has been useful until now in the present study—permitting a clearer picture of numismatic evolution within each country—the complexity of modern research makes it necessary, from this point on, to proceed on the basis of specialized fields in the science. Increased international contacts, facilitated through modern ways of life—which later on, in the 20th century, developed into genuine international cooperation through congresses, meetings, and exhibitions—opened a new era in numismatics. Although national barriers have never impeded collectors from exchanging specimens heretofore, scholars still were tied strongly to local or national traditions. This pattern changed toward the end of the 19th century, and very often new trends or methods which had been developed in one country found immediate response in related circles abroad.

Simultaneously, the attitude of scholars toward numismatics took a drastic turn. The time of the “Münzbelustigungen,” a leisurely game with old and puzzling objects, was gone. Gone also was the spirit of Humboldt, the universal genius who approached

all fields for the enjoyment of a continuous accumulation of knowledge. Numismatics had reached the point wherein the bulk of collected data, spotty as it may have been, needed to be utilized for wider constructive scholarship. The deeply penetrating mind of the specialist who is thoroughly familiar with aspects of specific historical periods and who can comprehend the function of coins within a multiplicity of phenomena had to replace the well-versed but often superficial amateur. “To be a great general numismatist is beyond the powers of one man,” was stated as early as 1885 by Stanley Lane-Poole;¹²² yet this British scholar believed that his generation had produced numismatists who could dignify the “science as being no longer servile but masterly.” Numismatics—no longer a mere auxiliary to archeology and history—was a science in its own right and, as such, had to be defined as to scope and method.

Another characteristic of numismatic research, which has emerged in the last 30 years, is the increasing number of special subjects that are being embraced by the constantly expanding range of numismatics. New approaches—such as the study of technical and esthetic aspects of coins, the laboratory methods of metallurgical research applied to coins, the study of falsifications, the increasing emphasis on photography as a major instrument in numismatic studies and as an educational factor in popularizing coins, the reinforcement of more traditional subjects like metrology and epigraphy—are finding wider and deeper application. The related studies of primitive media of exchange and especially the theory of the origin of money, a pet subject with German economists and numismatists during the past century, are producing new and original interpretations. Paper currencies and various other documents of value have entered the focus of modern research.

¹²¹ Haisig, “J. Lelewel's Importance in European Numismatics” (1961).

¹²² *Coins and Metal*, p. 2.

The role of revolutionizing the course of ancient numismatics—opening new ways and pointing out new perspectives in its research—fell to two men, Friedrich Imhoof-Blumer in the Greek field and Theodor Mommsen in the Roman.

GREEK NUMISMATICS

Imhoof-Blumer's name trails like a comet across the field of Greek numismatics. Born at Winterthur, Switzerland, in 1838 into a family of wealthy industrialists, he decided in his mid-thirties to devote his life to Greek numismatics.¹²³ Seldom, if ever, has an "amateur"—if this word could ever apply to Imhoof-Blumer—attained such a level of perfection in his research; seldom has a numismatist brought about such significant innovations. The study of Greek numismatics has always exerted a strong attraction on collectors because of the highly esthetic quality of Greek coins and because of the intriguing fact that these coins seldom bear more than the name of a city or a ruler—thereby posing challenging problems of identification. Imhoof-Blumer started as a collector of Greek coins, but very soon he began to publish his own observations as he discovered many entirely unknown or erroneously attributed coins. A long series of articles and publications was the result, of which *Monnaies grecques* (1883), *Griechische Münzen* (1890), and *Kleinasiatische Münzen* (1901-1902) are major works. No problem seemed too difficult for him to solve. His inquisitive spirit and his critical approach in using documentary and material evidence make most of his publications models of research. Sir George Macdonald rightly has called him *il maestro di color che sanno*.

Impressed by certain die similarities of some staters in the Greek province of Acarnania—coins which previously had been attributed to various cities on the basis of the obverse monograms—Imhoof-Blumer decided to assign them all to the same mint.¹²⁴ This recognition of the existence of identical dies—arising from a comparative study of coins—and the resultant identification of die-link sequences was a master stroke which opened new perspectives for the entire field of numismatics. This approach became a basic method for establishing the relative chronology of



Fig. 36.—FRIEDRICH IMHOOF-BLUMER (1838-1920), great Swiss collector and author in a portrait by Wilhelm v. Kaulbach (photo courtesy Mrs. L. Sulzer-Weber, Winterthur, Switzerland).

undated series such as Greek coinages. Since Winckelmann's time¹²⁵ stylistic considerations had been a major clue in delineating the time factor, but, as noted by Sir George Macdonald, "classification by style can hardly take us beyond a grouping into periods, whereas die-study may carry us a stage further and enable us to determine sequences within the periods with certainty and precision."¹²⁶

Imhoof-Blumer's principles, employed by the Germans—as in Kurt Regling's monograph on the coins of *Terina* (1906)—and by British scholars, found the most brilliant application, however, across the ocean in America, where Edward T. Newell, in 1912, revolutionized the chronology and attributions of certain coinages of Alexander the Great. It is

¹²³ For additional biographical and bibliographical data, see his obituary in *Revue suisse de numismatique* (1920); also ENGELI, *Friedrich Imhoof-Blumer* (1924).

¹²⁴ *Die Münzen Akarnaniens* (1878).

¹²⁵ See CAHN, "Analyse et interprétation du style" (1953); and especially the basic work of REGLING, *Die antike Münze als Kunstwerk* (1924).

¹²⁶ "Fifty Years of Greek Numismatics," p. 14.

interesting to note that, as early as the 1870s, an American numismatist, Sylvester S. Crosby—certainly unaware of Imhoof-Blumer's new methods—had tried, in his work *The Early Coins of America* (1875), to establish a chronological arrangement in early American coins by studying their die combinations. At the present time, die-studies are the common procedure in Greek numismatics and attempts have been made recently to apply it to Roman as well as modern coinages.

Inspired by Theodor Mommsen's idea of creating an extensive work on Greek coins as a companion to the "Corpus of Latin Inscriptions," the Prussian Academy of Sciences in Berlin assigned to Imhoof-Blumer the direction of *Die Antiken Münzen Nord-Griechenlands*. Such a corpus was intended to supersede all publications on the subject by describing every known coin type of each city or province within a chronological sequence, with full attention given to all available source material. This dream of a corpus of all ancient Greek coins seems to have haunted numismatists since the early 16th century, when Wolfgang Lazius first proposed such a work. But it proved too ambitious even for the late 1800s, and despite competent scholars, this gigantic German work progressed very slowly until it finally came to a halt in the late 1930s.¹²⁷

In 1939 new plans were made to proceed on a basis of international cooperation. Under the direction of Prof. Gerhard Rodenwaldt, scholars such as Paul M. Strack, Achim Hundt, Theodor Gerassimoff, and Vladimir Clain-Stefanelli were assigned to continue the work, but the enterprise died out during World War II.

At the turn of the century France began producing noteworthy numismatic works. Almost single-handedly, Ernest Babelon (1854-1924),¹²⁸ director of the Cabinet des Médailles in Paris and author of many authoritative works on Greek numismatics, undertook the task of publishing comprehensive works on the coinages of the eastern Greeks with such titles as *Les rois de Syrie* (1890) and *Les Perses Achéménides* (1893). But his greatest work, *Traité des monnaies grecques et romaines* (in five volumes, published between the years 1901 and 1932), in which he tried to challenge the largest publications, unfortunately remained only a torso.

¹²⁷ For complete, individual titles, see literature cited. See also IMHOOF-BLUMER, "Bericht über das Griechische Münzwerk der Preussischen Akademie" (1910).

¹²⁸ DIEUDONNÉ, *L'oeuvre numismatique d'Ernest Babelon* (1924).



Fig. 37.—ERNEST BABELON (1854-1924), director of the Cabinet des Médailles and author of many outstanding works in numismatics (photo courtesy American Numismatic Society).

At the British Museum a group of first-rate numismatists established what was to become a venerable tradition in the field of ancient numismatics: Reginald Stuart Poole (1832-1894), keeper of the coin cabinet; Percy Gardner (1846-1937); George F. Hill (1867-1948), who published a series of excellent works, *Handbook of Greek and Roman Coins* (1899), *Historical Greek Coins* (1906), *Historical Roman Coins* (1909); and especially Barclay V. Head (1844-1914), Poole's successor at the Museum.¹²⁹ With his *History of Numismatics* (1887), Head produced, in compact but excellently documented form, an indispensable guide book on Greek coinages. He described his purpose: "One of the distinctive features of the present work

¹²⁹ For additional information, see Head's obituary in *Numismatic Chronicle* (1915).



Fig. 38. BARCLAY V. HEAD (1844-1914) of the British Museum coin cabinet and author of *Historia nummorum* (photo from *Corolla Numismatica*).

is . . . to build up in outline the history of the ancient world as it existed from the seventh century before our era down to the closing years of the third century A.D., a space of nearly a thousand years."¹³⁰ This task Head accomplished masterfully within his 964 pages.

At Reginald Poole's instigation, the British Museum in 1873 began the publication, in catalog form, of its collection of Greek coins. During a span of over fifty years a work of impressive quality has been achieved; by 1927 twenty-nine volumes had been issued. Maintaining Eckhel's geographical sequence, the titles include the ancient Greek coinages of Italy, Greece, the Islands, Asia Minor, Egypt, and Cyrenaica; still to be covered are Gaul, Spain, and Mauritania. While the first volumes, on which Poole and Gardner collaborated, adhered strictly to the form of a catalog, the later volumes, written by

¹³⁰ Preface to the first edition, p. xvii.

B. V. Head, G. F. Hill, and more recently E. S. G. Robinson—with extensive introductory studies on the monetary history of each geographical entity—come closer in their concept to a genuine corpus. Today this fine tradition is being continued by Kenneth G. Jenkins, Keeper of Greek coins in the Museum.

In addition to the catalogs, the British Museum in 1932 published a selection of the most outstanding Greek coins in the museum. *A Guide to the Principal Coins of the Greeks* (reprinted in 1959 in its 4th edition) was compiled by G. F. Hill on the basis of B. V. Head's earlier *Coins of the Ancients* (1880).

Contrary to the opinion of some who consider a catalog a waste of effort, unworthy of any scholar, such publications are invaluable. No corpus or monograph could be completed without the aid of accurate descriptions of countless specimens. Consequently, an increasing number of collections, public and private, are made accessible to research through such catalog publications. Largest and most impressive is *Sylloge nummorum Graecorum*, the title of an international series of publications: British, Danish, German, and, more recently, American catalogs published separately in those countries. This multi-volume work, which tries to apply to numismatics the principles of the *Corpus Vasorum*, stresses especially the importance of excellent photographic reproductions of every specimen. Begun in 1931, it is still being published.

Another outstanding work which contains numerous photographs of coins is the catalog of the *McClellan Collection of Greek Coins* (1923-1929), compiled by S. W. Grose for the Fitzwilliam Museum of Cambridge University and used often as a reference book. In the United States, the Museum of Fine Arts in Boston, which possesses some of the finest examples of Greek coins (most of which came from the E. P. Warren Collection and were published earlier by Kurt Regling in *Die griechischen Münzen der Sammlung Warren*, 1936), published in 1955 their own *Catalogue of Greek Coins*, compiled by Agnes Baldwin Brett. Also, the J. Ward Collection, housed in the Metropolitan Museum, was published by Sir George F. Hill in 1901.

One of the most interesting phenomena in classical numismatic research is the transformation through which the idea of a corpus has gone. Initially conceived in the 16th century as a publication which would encompass the entire classical world, it has been confined in modern times, by the Prussian Academy

of Sciences, to ancient Greek coinages, but even this was never completed. Instead, monographs of single Greek cities or provinces—in other words, subjects of more restricted scope—were given preference, and within the last few decades a considerable number of first-rate publications of this sort have appeared. They present the numismatic material in a well-rounded historical picture, scrutinized and analyzed from a variety of viewpoints. Metrological as well as art elements are given maximum consideration, and the coins are viewed in the context of economic trends and art products of each period.

Some outstanding monographs are: in Germany, Willy Schwabacher, "Die Tetradrachmenprägung von Selinunt" (1925), Erich Boehringer, *Die Münzen von Syrakus* (1929); in Switzerland, Herbert Calu, *Die Münzen der sizilischen Stadt Naxos* (1944); in France, Oscar Ravel, *Les "Poulains" de Corinthe* (1936-1948); in Belgium, Jules Desneux, *Les tétradrachmes d'Akanthos* (1949); in England, Charles T. Seltman, *Athens, Its History and Coinage* (1924); in the United States, Sydney P. Noe, *The Coinage of Metapontum* (1927-1931) and *The Thurium Di-staters* (1935).

Works of signal importance in ancient Greek numismatics, introducing new viewpoints in the problem of dating the earliest Greek coinages, have been published in the last decade. W. L. Brown's article "Pheidon's Alleged Aeginetan Coinage" (1950), in which he attempted to establish the date of the earliest coinage in continental Greece, was followed shortly after by E. G. Robinson's basic discussion on the date of the first Greek coinage in Asia Minor, "The Coins from the Ephesian Artemision Re-considered" (1951), and continued in 1956 under the title "The Date of the Earliest Coins." In addition, important changes in the dating of coinages of the Persian kings have been brought about almost simultaneously by two publications, Sydney P. Noe's *Two Hoards of Persian Sigloi* (1956) and E. G. Robinson's "The Beginnings of Achaemenid Coinage" (1958).

A further development in the field of classical numismatics is that publications which give full consideration to special problems are becoming increasingly popular. Metrology, the science of weights and measures and a favorite subject since the early 15th century, has received excellent treatment in the studies of Friedrich Hultsch (*Griechische und römische Metrologie*, 1882), Johannes Brandis, Erich Pernice, Prince Michel C. Soutzo (*Systèmes monétaires primitifs*, 1884), Walther Giesecke (*Antikes Goldwesen*, 1938; *Sicilia numismatica*, 1923; *Italia numismatica*, 1928), and

Oskar Neubauer (*Die Griechischen Münzen*, *Münzlexikon*, 1923).

"Epigraphical Notes on Greek Coins" (1945-1950) by Marcus Tod, *Bibliography of Greek Coin Hoards* (1925 and 1937) by Sydney P. Noe, the studies on falsifications by Hugo Gaebler (*Fälschungen makedonischer Münzen*, 1931-1942) and Oscar Ravel ("Notes techniques pour reconnaître les monnaies grecques fausses," 1933) continuing the classic works of Joannes Svoronos and Sir George Hill¹¹ on the famous counterfeiter Constantine Christodoulos and Carl Wilhelm Becker cast new light onto other areas. Problems connected with the minting process were the subject of studies by Sir George Macdonald ("Loose and Fixed Dies," 1906), Charles T. Seltman, Carol H. V. Sutherland, Oscar L. Ravel, Willy Schwabacher, Ettore Gabrici (with his controversial *Tecnica e cronologia delle monete greche dal VII al I secolo a.C.*, 1951), and, more recently, G. Kraay.

New and challenging possibilities emerge from laboratory tests: microchemical analyses, specific gravity tests, spectrographic analyses, and the application of x-rays and gamma rays to the study of coins. In Belgium Paul Naster, in the United States Earle R. Caley (*Chemical Composition of Parthian Coins*, 1955), and in Canada Prof. William P. Wallace ("Impurities in Euboean Monetary Silver," 1954) are the names of only a few scholars who have been instrumental in broadening the way for a more exact knowledge of the metallic composition of ancient coins—a field of research opened up by the work of B. V. Head, J. Hammer, and K. B. Hofmann before the turn of the century. Fresh viewpoints on the metallic supply of the mints, on economic phenomena such as the debasement of currencies, and on new and positive methods in the detection of authentic, false, or altered specimens, are the perspectives revealed by these methods.¹²

The esthetic perfection of Greek coins has always appealed to collectors and scholars. Percy Gardner, Reginald Poole ("On Greek Coins as Illustrating Greek Art," 1864), George F. Hill (*Select Greek Coins*, 1927), and Sir Arthur Evans have suggested the relation between the history of art and classical numismatics, but it is due to Kurt Regling that the Greek coin has come to be generally accepted as a

¹¹ SVORONOS, *Synopsis des mille coins grecs de la collection de Constantinople* (1922), Hill, *Becker the Counterfeiter* (1934).

¹² An excellent bibliography on the subject is in NAOB, "Numismatique et méthodes de laboratoire" (1953) see also the journal *Archaeometry*.



Fig. 39. KURT REGLING (1876-1935), director of the Münzkabinett in Berlin (photo courtesy Staatliche Museen, Berlin).

work of art, a manifestation of the highly esthetic mind of the ancients and an equal to major works of art. His book *Die antike Münze als Kunstwerk* (1924) has found many enthusiasts, with the result that it has become a tradition among wider circles of collectors and art students to consider Greek coins almost exclusively from the esthetic point of view. Giulio E. Rizzo's monumental publication on the Greek coinage of Sicily, *Monete greche della Sicilia* (1946), and especially Charles T. Seltman's work, *Masterpieces of Greek Coinage* (1949), with its excellent photographic enlargements taken from outstanding specimens and accompanied by explanatory text, have contributed greatly to the diffusion of this attitude. Recently, Prof. W. Schwabacher has published an excellently written monograph devoted to one of the great masterworks in ancient Greek numismatics, the demareteion of Syracuse. *Das*

Demareteion (1958) has found wide appeal with non-specialists as well as scholars.

In the late thirties, the Germans Max Hirmer and Kurt Lange initiated, almost simultaneously, a new kind of publication with Hirmer's *Die schönsten Griechemünzen Siziliens* (1940) and Lange's *Götter Griechenlands* (1940), *Herscherköpfe des Altertums* (1938), *Antike Münzen* (1947), and *Charakterköpfe der Weltgeschichte* (1949). Intended for wider circles of amateurs and the public in general, these books accentuated the esthetic aspect of coins by reproducing enlarged and artistically executed photographs of beautiful specimens. Many of the volumes carry very little text. A few notes or a brief introductory study gives the reader necessary information and entrusts to pictures the function of telling the story. These very attractive publications, which usually do not limit themselves to the Greek period but freely roam the entire span of history, have had a highly educative result and certainly contribute more than any other kind of publication to the familiarization of the uninitiated with the world of numismatics.

Outstanding publications of this kind are: Herbert Cahn's *Monnaies grecques archaïques* (1947), *Früh-hellenistische Münzkunst* (1945); Leo and Maria Lanckoronski's *Das römische Bildnis in Meisterwerken der Münzkunst* (1944), *Mythen und Münzen* (1958); Leopold Zahn's *Schönes Geld aus zwei Jahrtausenden* (1958); and Jean Babelon's *Dauernde als Erz, das Menschenbild auf Münzen und Medaillen* (1958)—also in English as *Great Coins and Medals* (1959)—with excellent photographs by Jean Roubier.

ROMAN NUMISMATICS

Based on the preliminary works of Count Bartolomeo Borghesi and Celestino Cavedoni, Theodor C. Mommsen (1817-1903),¹³³ the famous historian of ancient Rome, issued in 1860 in Berlin his master work *Die Geschichte des römischen Münzwesens*. Isolated historical phenomena and loose chronological elements which had puzzled many of his predecessors were solved by Mommsen and built into a single logical structure which attempted to define the evolution of a highly organized institution, the Roman

¹³³ For additional biographical and bibliographical information, see Mommsen's obituaries: DRESSL in *Zeitschrift für Numismatik* (1904); GARRICA in *Revista italiana di numismatica* (1903).

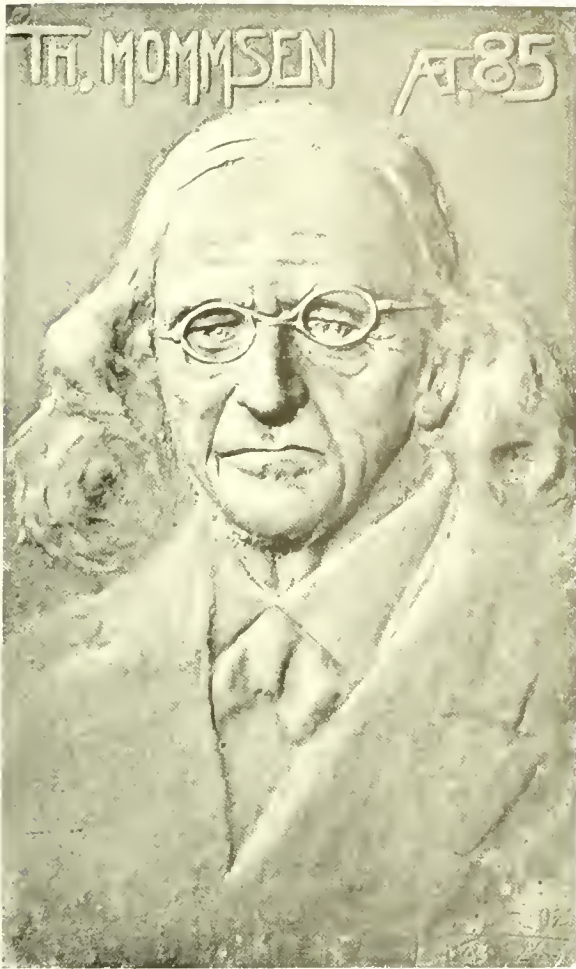


Fig. 40.—THEODOR C. MOMMSEN (1817-1903), noted German historian (Div. of Numismatics photo).

mint. Seeking the basic principles which governed the mint and at the same time considering the progressive development in the organization of previous Asiatic and Greek mint systems, Mommsen tried to explain the legal aspects of Roman coinage as part of the fundamental state laws and to solve the difficult problem of chronology within the Republican coinage.

After Joseph Eckhel's earlier enlightening work, Mommsen's approach seemed to be the logical direction of development for Roman numismatics. Nevertheless, for decades to come, the erudition of both men had to yield in popularity to Henri Cohen's unscholarly but extremely practical manuals on Roman coins. The latter's methods in his *Description générale des monnaies de la république romaine* (1857) stood for

almost three decades until they were replaced, partly by Ernest Babelon, who tried to use Mommsen's chronological system but ended up maintaining Cohen's unscientific alphabetical arrangement of the so-called "family coins." Babelon's *Description historique et chronologique des monnaies de la république romaine* (1885-1886) was challenged later by Herbert Grueber's chronological arrangement based on Comit de Salis' work which Grueber followed in his excellent catalog and study *Coins of the Roman Republic in the British Museum* (1910). Also indispensable were Max von Bahrfeldt's corrections and additions to these listings, published over a period of twenty-two years in his three-volume *Nachträge und Berichtigungen* (1897-1919).

During the first three decades of the present century, interest in Roman numismatics has centered mainly around the imperial coinage.¹⁴⁴ Special attention must be given in Italy to Francesco Gnecci with his excellent publications of Roman medallions and coins, *I medaglioni romani* (1912) as well as *Monete romane* (1896), and Lodovico Lafranchi, who, in a great number of studies, covered many historical aspects of the Roman Empire. Remarkable are his monographs on the organization of the Roman mint and on the coinages of Augustus and Magnentius.¹⁴⁵

Representative of German research in the same field are Max Bernhart and Paul Strack. The former produced a very systematic and useful handbook on the imperial coinage, *Handbuch zur Münzkunde der römischen Kaiserzeit* (1926), while the latter attempted to apply the corpus idea to the coinages of the second century A.D., with strong emphasis on the historical interpretation of numismatic material, in his *Untersuchungen zur römischen Reichsprägung des zweiten Jahrhunderts* (1931-1937).

The dean of Roman numismatics, however, is Harold B. Mattingly (1884-1964), who has been associated for many years with the British Museum. A score of important publications scattered over a period of fifty years suggest his extensive knowledge, his deep understanding of a civilization long past, and his ability to bring that era to vivid life for the reader.

¹⁴⁴ For bibliographies of this period, see BERNHART, *Bibliographischer Wegweiser* (1922); CARLON, "A Report on Research in Roman Numismatics" (1953). For the latest developments, see HAROLD and HAROLD B. MATTINGLY, "The Republic and the Early Empire" (1961); KEST, "The Late Roman Empire" (1961).

¹⁴⁵ For a list of his works, see PAGANI in *Rev. de Numismatique* (1955).

"The life of the Empire," writes Mattingly, "is, in many ways, so like our own that we can read of it without often feeling shock or surprise."¹³⁶ *The Coins of the Roman Empire in the British Museum*, a large publication of which six volumes have been issued since 1925, and *The Roman Imperial Coinage*, a comprehensive work still in process of publication, which Mattingly, in collaboration with Sydenham, began to publish in the same year, constitute basic references for the imperial series. Not to be overlooked also are Mattingly's comprehensive studies, his earlier *Roman Coins from the Earliest Times to the Fall of the Western Empire* (1928) and his more recent work *Roman Imperial Civilization* (1957).



Fig. 41.—HAROLD MATTINGLY (b. 1884), famous British scholar (photo from *Essays in Roman Coinage*).

The two catalogs with their high scholarly standards—reflected in the chronological arrangement of the coin material, in detailed descriptions, in profuse historical notes, and especially in elaborate studies of the respective coinages which precede every volume—should have supplanted Cohen's handbook on imperial coins with the general public, as it has with scholars, but this has not been the case.

An article entitled "The Date of the Roman Denarius and Other Landmarks in Early Roman

¹³⁶ *Roman Imperial Civilization*, pp. 2-3. For Mattingly's publications, see COPINGER *Bibliography* (1956).

Coinage," which Mattingly and E. S. G. Robinson published in 1933 in the *Proceedings of the British Academy*, brought on one of the liveliest disputes in numismatics. The British scholars, using considerable material evidence, proposed to move the date of the beginning of the Roman Republican denarius from 269 B.C. to 187 B.C. This thesis, or as Rudi Thomsen called it, "the Mattingly revolution," found ready support in England, France, and Germany. The Rev. E. A. Sydenham, applying these premises, wrote a handbook, *The Coinage of the Roman Republic* (1952), the first of its kind in the twentieth century and a book which should replace Ernest Babelon's obsolete *Monnaies consulaires*. In Germany Walther Giesecke, the best modern specialist in ancient metrology, discussed the problem on a corresponding basis in his book *Antikes Geldwesen* (1938) and arrived at similar conclusions which invalidated the old, traditional date.

In direct opposition to this stand, there arose an Italian school under Ettore Gabrici, Lorenzina Cesano, Laura Breglia, and Attilio Stazio.¹³⁷ Such a dispute could hardly fail to bring numismatics of the Roman Republic to the center of scholarly attention, and a considerable number of more or less authoritative handbooks and articles have appeared in recent years, taking various strong positions in the controversy.

In 1952 the Austrian numismatist Karl Pink stepped into the debate with his publication *Triumviri Monetales and the Structure of the Coinage of the Roman Republic*. Pink is renowned as the representative of the Viennese school of research, which attempts to establish, on the basis of data yielded by the coins, the fundamental system of the organization of the Roman mint. On this premise, he outlined the structure of the coinage, explaining its chronological sequence as well as its evolution. This "Aufbau," as it is called, was used by Pink in his study "Der Aufbau der römischen Münzprägung in der Kaiserzeit" (1933+) and by other Viennese numismatists, such as Robert Göbl and Georg Elmer, to determine the organization of the mint in the late 3rd and 4th centuries A.D.

The emphasis placed by Prof. Pink on a closer study of the legal aspects of coinage as an expression of the Roman state finds a counterpart in Prof. Andreas Alföldi's proposal to give more consideration to stylistic elements as a clue in establishing

¹³⁷ See the excellent outline in THOMSEN, *Early Roman Coins* (1957); also STAZIO, "Progressismo e conservatorismo negli studi sulla più antica monetazione romana" (1955).

related series. The latter's views can be seen in his article "Studien zur Zeitfolge der Münzprägung der römischen Republik" (1954).¹³⁸ In addition to stylistic considerations, Alföldi also proposed the comparative study of dies as a possible key to solving problems of relative chronology in certain coinages. He attempted to apply this in his article "The Portrait of Caesar on the Denarii of 44 B.C. and the Sequence of the Issues" (1958). Similar methods were used by the British scholar Colin M. Kraay in his studies of the Roman imperial series. Mr. Kraay was able to cast new light on the operation of the Roman mint by virtue of his research on the copper coinage of Emperor Galba in the book *The Aes Coinage of Galba* (1956).

It is obvious that the numismatic history of the first Roman emperors is especially popular with British scholars. In order to complete our survey of Roman numismatics we should not fail to mention Robert A. G. Carson, in charge of Roman coins at the British Museum, who has made many contributions to the history of Roman coinage in general and of Roman Britain in particular. Michael Grant is the author of a recent handbook, *Roman Imperial Money* (1954), as well as studies on the coinages of Augustus and Tiberius, such as *From Imperium to Auctoritas* (1946) and *Aspects of the Principate of Tiberius* (1950). The great specialist in the history of Roman Britain is Carol H. V. Sutherland, who has produced, in addition to many studies on Roman numismatics, a history on *Coinage and Currency in Roman Britain* (1937).¹³⁹

The history of the coinage of the late Roman Empire has proven to be a very attractive field of research for scholars in many countries. In surveying the past few decades we should mention, in addition to the work of the above-noted Austrians Karl Pink, Robert Göbl, and Georg Elmer, many additional studies coming from other countries. To the monumental but partly obsolete work of Jules Maurice, *Numismatique constantinienne* (published in 3 volumes between 1908 and 1912), have been added recently a series of signal contributions to the study of the coinage of Constantine the Great, by Patrick Bruun, Andreas Alföldi, and Maria Alföldi. Other periods of Roman history have been investigated in numerous

studies which range from coin hoards through the history of the late Roman mints, to such diversified themes as the metrology and technique of late Roman coins. The British scholars Robert A. G. Carson, Carol H. V. Sutherland, J. P. C. Kent, Philip Hill, the Germans Konrad Kraft, Maria R. Alföldi, and the Austrian Guido Bruck, the French Pierre Bastien, and the Scandinavian Patrick Bruun are only a few of the outstanding scholars who have made substantial contributions in this field.

BYZANTINE AND NEAR EASTERN NUMISMATICS

In Byzantine numismatics recent scholarly attention has been concentrated chiefly on specialized subjects. Works on metrological problems, on the monetary policy and currency reforms of Byzantine emperors, as well as publications of hoard material can be recorded for the past few decades.¹⁴⁰

In Israel the research of Adolf Reifenberg (1899-1953)¹⁴¹ into his nation's old coinages (*Ancient Jewish Coins*, 1940) is being continued at present by many scholars at the Hebrew University in Jerusalem and at Kadman Numismatic Museum in Tel Aviv. Many important contributions are to be found in the publications of the Israel Numismatic Society and in Leo Kadman's monographs on ancient sites in the series "Corpus nummorum Palaestinensium."

The coinages of the Islamic world have been one of the favorite subjects for British scholars. To William Marsden's *Numismata orientalia illustrata* (1823-1825) and Oliver Codrington's *Manual of Musliman Numismatics* (1904) many useful references have been added during the closing years of the 19th and the beginning of the 20th centuries.¹⁴² Stanley Lane-Poole's great work in 10 volumes, *Catalogue of Oriental Coins in the British Museum*, was issued between 1875 and 1890. Recently John Walker has published two volumes of the *Catalogue of Muhammadan Coins in the British Museum* (1941; 1956) which cover the Arab-Sassanian and the Arab-Byzantine coinages. His

¹³⁸ For more details on recent developments, see CARSON, *op. cit.*; KRAFT, "The Late Roman Empire" (1961); MÜLLER, "The Byzantine Empire" (1961).

¹³⁹ See CASSTI-SALZMANN, "Bibliography of A. Reifenberg" (1954).

¹⁴² For a survey, see MÜLLER, "Islamic and Sassanian Numismatics" (1953) and "Islamic Numismatics" (1961). See also MAXLER, *Bibliography of Muslim Numismatics* (1954).

¹³⁵ A list of his works is in BÖGLI, "Oeuvre littéraire d'André Alföldi" (1959-1960).

¹³⁹ For a bibliography of other works by Grant and Sutherland, see CARSON, "A Report on Research in Roman Numismatics" (1953), and especially the recent report of MATHINGLY, "The Republic and the Early Empire" (1961).

works, as well as the studies of the American George C. Miles (*The Coinage of the Umayyades of Spain*, 1950, *Early Arabic Glass Weights and Stamps*, 1948, 1951) are real accomplishments in the field of Oriental numismatic research. Also noteworthy is Göbl's attempted "Aufbau" of the Sassanian coinage.

Still useful as references are the old catalogs of major Islamic collections such as Carl J. Tornberg's *Münzkabinett* (1846) for the Stockholm Royal Cabinet or Meksei K. Markov's *Inventarnii katalog musulmanskikh monet* (1896) for the Hermitage collections. The catalog of the Berlin cabinet, *Katalog der orientalischen Münzen*, compiled by H. Nützel between 1898 and 1902, is of less permanent value.

The picture of modern Islamic research would be incomplete without mentioning the names of Paul Balog, author of many works on technical problems; Marcel Jungfleisch, specialist in metrological problems; Dominique Sourdel in France; Ulla S. Linder Welin in Sweden; A. Bykov and E. A. Davidovitch in Russia; or Felipe Mateu y Llopis in Spain, who has been publishing, among other specialized studies, a listing of Islamic coin hoards found in Spain.

MEDIEVAL NUMISMATICS

Whereas in ancient and, in particular, Greek numismatics the emphasis falls very often upon esthetics, in the medieval and modern periods historical and economic factors seem to prevail. Many complex problems connected with the turbulent events of the migrations and their ensuing periods—trade relations, trade routes, economic expansion, penetration of foreign ethnic elements, sovereign rights, and other questions—often find an unexpected answer in coin hoards. Thus, major attention is given to the exact historical attribution of coin finds and to a sound, comprehensive interpretation of hoard materials. German, French, Scandinavian, and British scholars lead in the field of interpreting medieval finds.

After the noted Austrian scholar Arnold Luschin von Ebengreuth,¹¹² the study of medieval numismatics was pursued by many German scholars such as Arthur Suhle, Wilhelm Jesse, and Walter Haevernick. Since 1941, Haevernick and a group of younger numismatists like Peter Berghaus and Gert Hatz, who have centered around the periodical *Hamburger*

Beiträge zur Numismatik, have begun systematically to mine the enormous numismatic material of the German territories.¹¹³ Recently Prof. Haevernick, in collaboration with Suhle and E. Mertens, attempted to collect the hoard material for Thuringia in *Die mittelalterlichen Münzfunde in Thüringen* (1955).

Stimulated by this intensive work on medieval finds, many scholars have produced first-rate studies such as monographs on single mints or entire regions as well as comprehensive works of a more general character. For example, Karl Kennepohl published the history of the coinage of Osnabrück, *Die Münzen von Osnabrück* (1938), and Friedrich Wielandt included in his *Badische Münz- und Geldgeschichte* (1955) the monetary history of Baden from the 14th century to modern times. The history of economics and especially the history of medieval trade centers have benefited greatly from such preliminary studies of hoards. As an illustration of the latter, Herbert Jankuhn's *Haithabu: Ein Handelsplatz der Wikingerzeit*, which went into its third edition in 1956, attempts to bring into focus the full picture of medieval trade in the Germanic north, while economic historian Emil Waschinski's main preoccupation is the history of prices and the buying power of money.¹¹⁵ Other works of exceptional merit in Germany which draw strongly upon hoard material are Vera Jammer's study of the beginning of the coinage in Saxony (*Die Anfänge der Münzprägung im Herzogtum Sachsen*, 1952), Wilhelm Jesse's *Wendische Münzvereine* (1928) and more recently his *Münz- und Geldgeschichte Niedersachsens* (1952). Jesse is also the author of an invaluable publication of source material on German numismatics: *Quellenbuch zur Münz- und Geldgeschichte des Mittelalters* (1924).

France has had a well-established tradition in this field since the past century, a tradition which has been kept alive through such authoritative studies as *Traité de numismatique du moyen âge* (1891–1905), by Arthur Engel and Raymond Serrure, and through such publications as those by Maurice Prou on the coinages of the Merovingians and the Carolingians (*Les monnaies mérovingiennes*, 1892; *Les monnaies carolingiennes*, 1896), by Gustave L. Schlumberger on the period of the Crusades (*Numismatique de l'Orient Latin*, 1878–1882), and by Adrien Blanchet and Adolph Dieudonné,

¹¹² Good bibliographical surveys on medieval numismatics are in BERGHAUS, "Die frühmittelalterliche Numismatik" (1961); HATZ, "Deutschland" (1961).

¹¹³ *Wahrung, Preisentwicklung und Kaufkraft des Geldes in Schleswig-Holstein von 1206–1861* (1952) and *Die Münz- und Wahrungspolitik des Deutschen Ordens* (1952).

authors of a handbook on French coinages, *Manuel de numismatique française* published in 4 volumes between 1912 and 1936.¹⁴⁶ In recent times the late Pierre Le Gentilhomme (1910-1947), Jacques Yvon, and especially Jean Lafaurie are the leading names in numismatic research of the early and late Middle Ages in France. Although no major work on French feudal coinage has been issued within the past few decades, there have been many specialized studies on regional issues, on various coin types, or on coin finds and their importance. Quite often these studies are interspersed with interesting discussions on the monetary history of France.¹⁴⁷

In Great Britain efforts have centered on a publication similar to the sylloge of Greek coins. The first two volumes of the *Sylloge of Coins of the British Isles—Ancient British and Anglo-Saxon Coins in the Fitzwilliam Museum* (1958) by Philip Grierson, and *Anglo-Saxon Coins in the Hunterian and the Coats Collections* (1961) by Anne Robertson—are a very promising beginning. Numerous other studies related to the coinages of the early kingdom are evidence of the excellent results being achieved in Great Britain by such scholars as Michael Dolley, Philip V. Hill, and Ian A. Stewart. As Grierson stated, "In the detailed study and analysis of privy marks . . . in the identification and even the reconstruction of the history of individual dies . . . English scholars have pushed their study to a higher point than has been attained elsewhere."¹⁴⁸

A leading scholar of numismatic research on the Middle Ages is Philip Grierson from England. With a fine, synthesizing mind, possessing an impressive store of numismatic and historical data, he has covered in numerous studies almost the entire continent of Europe. Within the wide range of his research, which begins with the late Roman and Byzantine periods and comes up to the late Middle Ages, he encloses a multitude of geographical areas: Mediterranean, Central European, and Scandinavian countries, as well as the Arabic world. The monetary relations between East and West (especially the Byzantine Empire and the Arabs), the origin and evolution of certain coin denominations, the legal aspects of special monetary problems, the interpretation of coin hoards,

the identification of counterfeit are only a few of the manifold subjects probed by Grierson.¹⁴⁹

Also prominent in the field of medieval numismatics are the Scandinavian countries,¹⁵⁰ especially Sweden, with intensive research centered chiefly around finds of the migration period. Scholars such as Bengt Thordeman and Nils Ludvig Rasmussen in Sweden, Hans Holst in Norway, Georg Galster¹⁵¹ in Denmark, and Helmer Salmo in Finland have contributed greatly to defining the role played by the Scandinavian region in the monetary evolution of Europe.

Currently, medieval numismatics also finds wide recognition beyond the Iron Curtain in eastern European countries. Recent reports, especially from Czechoslovakia, Poland, and Rumania, show that a very active effort is being directed toward excavations and toward classification of hoard material.¹⁵² Some of the representative names include: Emanuela Nohejlová-Prátová in Czechoslovakia, author of an extensive publication on hoard material in Bohemia, Moravia, and Silesia from ancient times up to the 19th century, *Nálezky mincí v Čechách, na Moravě a ve Slezsku* (1955-1958); Bucur Mitrea and Octav Floca in Rumania, with research on treasures found within the ancient Dacian territory; Stanislaw Suchodolski, Tadeusz Lewicki, and Ryszard Kiersnowski in Poland; V. L. Janin and J. V. Sokolova in Russia; Lajos Huszár in Hungary; and T. Gerassimou in Bulgaria.

Interest in the medieval period has been traditional in these eastern European countries. The publications of Marian Gumowski in Poland (*Podręcznik numizmatyki polskiej*, 1914, and *Coğrafya nummorum Poloniae*, 1939), of C. Moisil and O. Hiescu in Ru-

¹⁴⁶ For some bibliographical information see GRIERSON, "Report" (1953); MITCHELL, "The Byzantine Empire" (1961); BERGHAVS, "Die frühmittelalterliche Numismatik" (1961).

¹⁴⁹ See RASMUSSEN, "Scandinavian Medieval Numismatics" (1961).

¹⁵⁰ For a list of his publications, see GALSTER, *Coins and History*, pp. 7-13.

¹⁵¹ For a bibliographical survey, see NOHEJLOVÁ-PRÁTOVÁ, "La numismatique en Tchécoslovaquie depuis 1945" (1953). For reports on Polish numismatics, see LEWICKI, "Scientific Activity of the Numismatic Centre" (1961); SUCHODOLSKI, "Review of the Bibliography of Polish Numismatics, 1958-1960" (1961); KIERSNOWSKI, "La numismatique médiévale en Europe de l'Est" (1961). For Rumania, see MITREA, "Cinci-sprezece ani de activitate numismatica în Republica Populă a Romîniă: Bibliografie" (1960). For a general survey of Eastern Europe, see *Numismatische Literatur Osteuropas und des Balkans* (1959; 1963).

¹⁴⁶ For further bibliographical information, see GRIERSON, *Select Bibliography*, pp. 36-40; BLANCHET and DIEUDONNÉ, *Manuel de numismatique française*, vol. 4, pp. 1-4.

¹⁴⁷ See YVON, "France, Italie et Orient Latin" (1961).

¹⁴⁸ "Report on Medieval Numismatics," pp. 80-81.



Fig. 42.—LAURI O. TUDEER (1884-1955), Finnish numismatist (photo courtesy Kongelige Mønt- og Medaillesamling, Copenhagen).

mania, of Nicolas A. Moushinov in Bulgaria, of Ivan Rengjeo,¹³⁶ Milan Rešetar, and R. Marič in Yugoslavia, although often difficult to use because of language barriers, are significant contributions to the general history of coinage.

MODERN NUMISMATICS

Moving into the field of modern numismatics, we would expect to find a strong trend toward the history of money. The emphasis placed upon coins within a framework of historical, economic, and legal functions in the growth of a nation should be the final stage of any specific study dealing with the evolution of a national coinage. Many of the modern publications, in fact, aim at these higher levels; however, many others still adhere to purely descriptive methods, almost entirely eliminating any historical interpretation.

The idea that, because modern coins are a part of our time, when documentary evidence is abundant, they do not need to be exploited as historical source material is chiefly responsible in contemporary numismatics for the scores of works which limit

themselves to a listing of denominations, dates, and rulers. Also, since the publication of such works requires less effort and time, many catalogs of this kind have been published.

Good examples of situations demanding such treatment are found in Italy and Germany, two nations which possess extremely intricate monetary histories. King Victor Emmanuel III solved the problem of describing Italian coinages by publishing, between 1910 and 1940, a huge catalog in twenty volumes, the *Corpus nummorum Italicorum*. This work lists an impressive number of the coins struck by Italians or on Italian territories since the eighth century. A briefer work attempting to give a comprehensive history limited to modern Italian currencies was published in 1915 by Giovanni Carboneri: *Monete e biglietti in Italia dalla Rivoluzione francese ai nostri giorni*.

The Germans, who have numerous and excellent studies on various periods and local issues, cannot claim a single comprehensive work on their entire coinage. Mention should be made, however, of noteworthy publications in the form of a corpus which place numismatic material within a historical framework, like the studies of Alfred Noss on the coinages of Cologne, Treves, Jülich, and Berg, or of Friedrich von Schrötter on the coinages of Prussia.

¹³⁶ *Corpus der mittelalterlichen Münzen von Kroatien, Slavonien Dalmatien und Bosnien* (1950).

Recent German publications, such as Friedrich Wielandt's *Badische Münz- und Geldgeschichte* (1958) or Peter Berghaus' *Münzgeschichte der Stadt Dortmund* (1958), have tried to depict the monetary history of single cities or principalities. Beyond these it would be difficult to enumerate the many authors of German monographs. The bibliographies provided in Gehhart's *Die deutschen Münzen des Mittelalters und der Neuzeit* (1929) and in Grierson's *Select Bibliography* cover the most important titles. A major German publication which should be mentioned, however, is the encyclopedia of numismatics, *Wörterbuch der Münzkunde* (1950). Edited by Friedrich von Schrötter, this book is the most complete work of its kind, providing authoritative information in every field of the science.

Although Schrötter's book is the most acclaimed, there are some other useful works of this kind. Albert R. Frey's *Dictionary of Numismatic Names* (1917) gives a less extensive coverage of numismatics in general. More recently, Humberto F. Burzio produced in his *Diccionario de la moneda hispano-americana* (1956-1958) an excellent reference book for Spanish-American coinages. Similar titles concerned mostly with national subjects are Edoardo Martinori's *La moneta* (1915) or Felipe Mateu y Llopis' *Glosario hispanico de numismática* (1946).

Neighboring Austria presents interesting features in the publications of the Viennese numismatists August von Loehr and Eduard Holzmaier. Continuing the trend established by Viktor von Miller zu Aichholz (1845-1910), they can be classed among the most advanced representatives of the practically applied history of money. Miller zu Aichholz's compendious publication *Österreichische Münzprägungen* (1920)—revised in 1948 by Loehr and Holzmaier—was one of the first national catalogs to include paper money and other documents of value. The same trend can be seen in Loehr's work on the history of money in Austria, *Österreichische Geldgeschichte* (1946), and in the coin exhibits of the Vienna cabinet prepared by Prof. Loehr and Dr. Holzmaier. Along similar lines was the basic approach of the Swiss collector and numismatist Julius Meili, who included Brazilian paper money in his *Das Brasilianische Geldwesen* (1897-1905).

The concept of including paper currencies in the general study of numismatics is developing also in France, where R. Habrekorn and Jean Lafaurie, in the *Bulletin de la Société d'Étude pour l'Histoire du Papier-Monnaie*, have published many articles on the history

of French bull from the late 18th century to the present.

Lafaurie, the leading French numismatist, is busy in process of publication the best reference work on the royal coinage of his nation, *Les monnaies de la France*, two volumes of which have appeared already (1951; 1956) covering the period up to 1610.

In Italy, although research in ancient numismatic dominates the other fields, attention must be called to an impressive group of studies on medieval and modern Italian numismatics. Francesco and Lucio Gnecchi published an excellent work on the coins of Milan, *Le monete di Milano* (1884-1894), while Nicolò Papadopoli made a similar contribution on the coins of the Venetian Republic, *Le monete di Venezia* (1893-1919). An excellent reference work was published by Count Camillo Serafini, who produced, in *Le monete e le bolle plumbee del Melaglieri Feliciano* (1910-1928), an outstanding catalog of the coinages of the popes. Also noteworthy are Ernesto Bernareggi's recent publication on Italian Renaissance coins, *Monete d'oro con ritratto del Rinascimento italiano* (1954), and a greatly needed study on Sicilian coins by Rodolfo Spahr, *Le monete siciliane dagli Aragonesi ai Borboni* (1959). Of exceptional value are *Money, Prices and Civilization in the Mediterranean World* (published in America, 1956), and *Le accenture della lira* (1958), in which the Italian economist Carlo M. Cipolla brilliantly uses coins to guide him through the



Fig. 13. COUNT CAMILLO SERAFINI (1864-1952) at work in the Vatican Coin Cabinet (author's photo).

economic evolution of Italy and the entire Mediterranean world.

During the last century, numismatics of the Iberian Peninsula continued its centuries-old tradition, and many important works were published, as can be seen in the voluminous Spanish and Portuguese bibliography recently issued by Felipe Mateu y Llopis.¹⁵⁴ The tradition of penetrating deep into the history of a coinage and studying it in connection with contemporary documents was established during the 19th century by Alois Heiss (1820-1893), with excellent handbooks like *Descripción general de las monedas hispano-cristianas* (1865-1869). This scholarly tradition was followed by many outstanding Spanish numismatists such as Antonio Vives y Escudero, Casto María del Rivero, José Amoros, Antonio Beltrán Martínez, Adolfo Herrera (*El duro: Estudio de los reales de a ocho españoles*, 1914), and Tomaso Dasi, who added to his eight volumes entitled *Estudio de los reales de a ocho* (1950-1951) documents pertaining to the monetary legislation of each period. At present Spain can claim among its experts Prof. Felipe Mateu y Llopis, who has covered in a masterly way the entire field of Spanish numismatics, from the earliest periods of its history up to the present day. He has published a series of basic studies that include such titles as *La moneda española* (1946), *Glosario hispanico de numismática* (1946), and more recently the *Bibliografía de la historia monetaria de España* (1958), mentioned above.

In 1959 Octavio Gil Farrés published *Historia de la moneda española*, a handy reference book on general Spanish numismatics which is annotated with an excellent bibliography. Also noteworthy are the extensive studies by the American George Miles on the period of the Visigoths and Moors in Spain: *The Coinage of the Umayyads of Spain* (1950) and *The Coinage of the Visigoths of Spain* (1952).

Modern numismatic research in Portugal is represented chiefly by Dr. Augusto Carlos Teixeira de Aragão (1823-1903),¹⁵⁵ author of the standard handbook on Portuguese coinages, *Descrição geral e historica das moedas cunhadas em nome dos reis, regentes e governadores de Portugal* (1874-1880). Teixeira de Aragão organized, with the support of King Louis I, the numismatic collection in the royal palace of Ajuda.

¹⁵⁴ *Bibliografía de la historia monetaria de España* (1958); see also his "Bibliografía numismática de España y Portugal referente a los siglos VIII a XVI" (1961).

¹⁵⁵ See BATALHA REIS, "História bibliográfica da numismática portuguesa" (1946).

Other men who have contributed greatly to the development of Portuguese numismatics are José Leite de Vasconcellos (1858-1941), a famous archaeologist and teacher of numismatics, Manuel Joaquim de Campos (*Numismática Indo-Portuguesa*, 1901), Joaquim Ferraro Vaz, author of a very handy reference on Portuguese coins (*Catálogo das moedas portuguesas*, 1948), and Damião Peres. With a study on the coinage of Alfonso V, *Moedas de Toro* (1933), and a major publication in two volumes entitled *Cartilha da numismática portuguesa* (1946; 1955), Pedro Batalha Reis introduced the highest standards into Portuguese numismatic research.

Studies of similar merit can be found in South America, which can claim a series of outstanding publications on Spanish-American numismatics. Many of these works were written by the Chilean José Toribio Medina (1852-1930) under such titles as *Las monedas chilenas* (1902) and *Las monedas coloniales hispano-americanas* (1919).¹⁵⁶ More recently, works of exceptional merit have been Humberto F. Burzio's competent studies on the mints of Potosi and Lima, *La ceca de la villa imperial de Potosi* (1945) and *La ceca de Lima, 1565-1821* (1958), and his already-mentioned dictionary; F. Xavier Calicó's *Aportación a la historia monetaria de Santa Fé de Bogotá* (1953); and Francisco Pradeau's publications on Mexican coinages (1950 and 1957-1961). The latter scholar, an American, first published his study in English in 1938 under the title *Numismatic History of Mexico from the Pre-Columbian Epoch to 1823*.

Numismatic interests are widespread in Latin America. Argentina leads with a series of organizations, where coins are studied and collected, such as the Instituto Bonaerense de Numismática y Antigüedades (with a *Boletín* published since 1942), the Museo Histórico Nacional,¹⁵⁷ the Academia Nacional de la Historia, and the faculty of philosophy at the University of Buenos Aires. Other Spanish-American countries have various organizations formed by collectors or students: in Chile, with a tradition dating back to Medina's time, the Junta Chilena de Numismática and the Círculo de Amigos Numismáticos de Santiago; in Paraguay, the Instituto de Numismática; in Peru, the Sociedad Numismática; in Mexico, the Sociedad Numismática de México, which has published its *Boletín* since 1958. In Brazil, Rio de Janeiro houses an important collection of coins in the

¹⁵⁶ See ROBERTS, *José Toribio Medina* (1941).

¹⁵⁷ See *El Gabinete Numismático del Museo Histórico Nacional* (1949).

Museu Historico and at the Sociedade Numismática, which was founded in 1945. Since 1933, the Sociedade Numismática Brasileira in São Paulo has published the *Revista Numismática*.

In Canada, modern numismatics is viewed often as a delightful hobby of collecting national coins and tokens in numerous varieties and the current trend seems to emphasize handy catalogs for collectors. No major study can be found which can compete with the classic works on Canadian numismatics published in the past century by Joseph Leroux, *The Canadian Coin Cabinet* (1888), and by P. Napoléon Breton, *Illustrated History of Coins and Tokens Relating to Canada* (1894). Of great significance are the two collections of documentary sources relating to the financial history of Canada and of Nova Scotia, published in 1925 and 1933, respectively, by Adam Shortt. Since 1950, when the Canadian Numismatic Association was founded, *The C. N. A. Bulletin* (later *The Canadian Numismatic Journal*) has carried many interesting contributions to the national monetary history.

NUMISMATICS IN ASIA AND AUSTRALIA

In order to complete the overall picture in our survey, we should mention the Philippines, Australia, New Zealand, India, and a few other countries in the Far East.

The Philippine Numismatic and Antiquarian Society, with such members as Gilbert S. Perez, Pablo J. de Jesús, José P. Bantug, since 1948 has published many interesting contributions on the numismatic history of the island in a series called *Philippine Numismatic Monographs*.

Very active numismatic centers are in Australia: the Australian Numismatic Society, founded in 1913, and the South Australian Numismatic Society, founded in 1926. Both organizations publish contributions in their respective journals. An informative bulletin is issued also in New Zealand by the Royal Numismatic Society. Among other noteworthy contributions concerned with Australian numismatics are *Australasian Tokens and Coins* (1921) by Arthur Andrews, *The "Ingots" and "Assay Office" Pieces of South Australia* [1952] by James Hunt Deacon, and the *Foundation of the Australian Monetary System* (1953) by S. J. Butlin.

Although India presents an extremely intricate monetary pattern, it has attracted the attention of

scholars since the beginning of the 19th century. These researchers, the majority of them British, tried to master the extremely wide and ever-increasing field of Indian coins through numerous publications of coin material. The seven volumes of the *Catalogue of Indian Coins in the British Museum* (1884-1936) find their parallel in the catalogs of the Indian Museum in Calcutta, of the Panjab Museum in Lahore, or of the Central Museum in Madras, all of these books published by specialists such as Stanley Lane-Poole, Richard B. Whitehead, E. Thurston, and J. Allan.¹² More recently, Indian authors have contributed actively to the *Journal of the Numismatic Society of India*.

Since coins played an important part in China's development, Chinese historians realized at an early stage the importance of numismatic study. The earliest coin catalog (by Liu Ch'ien) is dated as far back as the 6th century A.D., but, unfortunately, it has been lost as also were the works of the next few centuries. During the Sun dynasty (960-1279), numismatists, trying to interpret the early coinage, often indulged in mythological explanations which prevailed in Chinese numismatics for many centuries. The Manchu period (1644-1911) raised this practice to a more scholarly approach, but we can hardly speak of scientific numismatic research until the publication in 1859 of Li Iso-hsien's catalog *Ku ch'uan hui* (Collection of Old Coins), a work profusely annotated with historical notes.

Chinese numismatics in the past two centuries has been described by Mr. Wang Yü-ch'ün: "On the one hand, the collector-numismatists studied the coin specimens but were unable to contribute substantially in deciphering the legends; on the other hand, the epigraphical scholars studied their inscriptions but neglected all other aspects of the coins. Neither group possessed the knowledge of the other, but both contributed toward the advancement of ancient Chinese numismatics. If the knowledge and the interest of both had been combined, numismatic studies in China might have advanced further."¹³ Despite this, serious numismatic studies were produced in the last half of the present century. In 1938 Ting Lu-pao published his *Ku ch'uan ta t'ung t'ao* (Encyclopedia of Old Coins) in 20 volumes; K'alen Shih published *Modern Coins of China* in 1949; and the excellent studies of Wang Yü-ch'ün on early

¹² For additional bibliography, see SINGHAR, *Bibliography of Indian Coins* (1950-1952).

¹³ WANG YÜ-CH'ÜN, *Early Chinese Coins*, pp. 1-5.

Chinese coins were published in English in 1951 and in Chinese in 1957. Collecting also was widespread and in 1940 the Chinese Numismatic Society was established in Shanghai, where it published a bi-monthly periodical until 1945.

In Japanese numismatics, L. de Villaret's "Numismatique Japonaise" (1892) and Neil Gordon Munro's *Coins of Japan* (1904) are sources which are extensively used to the present day. They were joined in later years by *The Old and New Coins of Japan*, a study by Toyojiro Tsukamoto, translated into English in 1930 by Saichiro Itami. The recent publications of the Asahi Shimbunsha (1954), of Masajiro Watanabe (1955), and of Atsushi Kobata (1958), as well as Toyosaburo Araki's works on Japanese paper money, illustrate the intense work done in numismatics by Japanese collectors and scholars.

In the West serious preoccupation with Far Eastern numismatics goes back to the end of the 19th century, when Albert Ferriën de Lacouperie, with his *Catalogue of Chinese Coins . . . of the British Museum* (1892), and Sir James Lockhart, with *The Currency of the Farther East* (1895-1898), produced not only excellent handbooks for the western world but also serious contributions to Chinese numismatics in particular. In more recent times these have included the Chinese catalog of the Numismatic Cabinet in Oslo, published in 1929 by Frederik Schjøth, the studies of Arthur Braddan Coole, *A Bibliography on Far Eastern Numismatics* (1940) and *Coins in China's History* (1936), and the excellent contribution of Howard F. Bowker, American author of an extremely useful bibliography. More recently, handy reference books on the modern coinages of both China and Japan have been published by Americans: Edward Kann's *Illustrated Catalog of Chinese Coins* (1954), and *Japanese Coinage* (1953) by Norman Jacobs and Cornelius Vermeule.

Also worth mentioning are excellent publications by Désiré Lacroix (*Numismatique annamite*, 1900), Albert Schroeder (*Annam, études numismatiques*, 1905), as well as the work by Reginald Le May, *The Coinage of Siam* (1932).

MEDALS

The medal, through its implicit artistic character, has never failed to attract collectors and students alike. After the voluminous accumulation of material pub-

lished by Van Loon and Hennis or gathered in the *Trésor de numismatique*, a more discriminating research set in during the final decades of the 19th century. The national medal and especially the medal of the Renaissance, with its exquisite artistic qualities, drew the interest of scholars. With the classic work of Alfred Armand, *Les médailleurs italiens des XVe et XVIe siècles*, published in 1879, the Renaissance medal became a popular subject. Julius Friedlaender's study of Italian medals from 1430 to 1530, as well as Georg Habich's excellent work *Die Medaille der italienischen Renaissance* (1924) were followed by Sir George Hill's classic *Corpus of Italian Medals of the Renaissance Before Cellini* (1930).

About the same time, the German medal and especially the medal of the period of Dürer found due appreciation. The studies *Die deutsche Medaille in kunst- und kulturhistorischer Hinsicht* (1907) by Karl Domanig, based on the Vienna Imperial Coin Cabinet, and *Die deutsche Schamünze des XVII. Jahrhunderts*, published in 1929-1934 by Georg Habich in Munich, were great achievements which defined not only the artistic excellence of the German medal but also its historical importance.

This tradition, well established in Paris and Munich, continues to the present day. In France many remarkable publications have come from the pens of Alfred Armand, Ernest Babelon, Ludvig Bransen, and Fernand Mazerolle. Currently, Jean Babelon is contributing, through his publications (e.g., *La médaille et les médailleurs*, 1927) and exhibitions, to the artistic and historic appreciation of medals. At the coin cabinet in Munich, Max Bernhart (1883-1952), who published the useful handbook *Medaillen und Plaketten* (1919), and Prof. Paul Grotemeyer, still active, have continued the excellent tradition established there by Georg Habich.

Interest in medals is equally high in other countries. Among the outstanding scholars in this field are H. Enno van Gelder in the Netherlands, a country with an appreciation for medals that dates back several hundred years, Eduard Holzmaier in Vienna, and Antonio Patrignani in Italy. As a work of unusual merit should be mentioned the *Bibliographical Dictionary of Medallists* (1902-1930), published in eight volumes by Leonard Forrer in London.

Public exhibitions of medals emphasizing historical or artistic subjects have been arranged temporarily in Paris (under the direction of the Paris mint), in Madrid, and in Barcelona. The Coin Cabinet in

Vienna and the Royal Coin Cabinet in Stockholm illustrate in their excellent permanent exhibits the historical and esthetic evolution of medals.

MAJOR COLLECTIONS

Major changes have taken place during the last half century in the development and organization of public collections. Two world wars and the ensuing political tensions could not occur without deeply affecting a discipline which depends so much on international collaboration. While the leading cabinets in London and Paris needed only a brief period for readjustment after the war, the German collections, which had suffered great losses, had to be entirely reorganized. Two major coin collections, the cabinets of Gotha and Dresden, for all practical purposes ceased to exist. The coins of the former were scattered widely, while the treasures of the latter were melted down in great part by Russian occupation troops.

These heavy losses seemed only to spur German scholars on to an intensified activity, and new and modernized exhibits are the result. The Berlin Cabinet, only recently reincorporated into the museum collections after a temporary journey to the Soviet Union, now has a new exhibition, illustrating the history of money, which was arranged in six halls by Arthur Sulde.¹⁶⁰ In Munich, at the Staatliche Münzsammlung, Dr. Paul Grotemeyer is engaged in a similar process of reorganizing the collections and modernizing the exhibits.

The list of major German coin cabinets would be incomplete without adding at least the names of a few museums which have given special attention to ancient and medieval coins: the Rheinisches Landesmuseum in Bonn and in Trier, the Römisch-Germanisches Zentralmuseum in Mainz, the Römisch-Germanisches Museum in Cologne, the Altesshloss Museum in Stuttgart, the Landesmuseum in Münster, and the very active Museum für Hamburgische Geschichte in Hamburg.

In Austria, August von Loehr and Eduard Holzman continued to direct the activities of the Vienna Cabinet with a first-rate collection of over 400,000 items and a comprehensive exhibit that illustrates paper money

¹⁶⁰ For a guide to the Berlin collection, see SCHULZ, *Führer durch die Schausammlung des Münzkabinetts* (1957).

and other matters of exchange, as well as some 500 medals.¹⁶¹

In central Europe, Switzerland, with numerous public collections in Bern, Basel, Zurich, Winterthur, and Lausanne, gives evidence of an intensive activity in the field of scholarly research,¹⁶² as well as a remarkable increase of outstanding private collections.

Similar trends can be noted in Belgium, the Netherlands,¹⁶³ and in the Scandinavian countries. Recently, Paul Naster in Belgium published the catalog of a famous collection of ancient coins, *La collection Lucien de Hirsch* (1959), which is part of the Cabinet des Médailles in the Bibliothèque Royale de Belgique. The Statens Historiska Museum in Stockholm, after World War II, opened several halls dedicated to medalliac art (fig. 44) and to the history of money in Sweden.¹⁶⁴ Nils L. Rasmusson, the director, has accompanied the exhibit panels with graphic representations of the history of money and prices in Sweden—a striking innovation which illustrates the general tendency to widen considerably the scope of numismatics. Similar in its range is the numismatic research being done in Denmark under the leadership of the senior numismatist Georg Galster. The Kongelige Mønt og Medaillesamling of the Nationalmuseet in Copenhagen has made an outstanding contribution to numismatics in the museum's catalog of Greek coins published within the *Sylloge numismatica Graecorum*, a monumental work initiated in 1941 by Dr. Niels Breitenstein and Prof. Willy Schwabacher.¹⁶⁵

In the Mediterranean area, Italy follows the general trend and, although the museum activity there gravitates more toward scientific research done by staff members, many new coin exhibits have been opened or planned for the near future. This activity, which can be followed in the columns of the *Annali*, published by the Istituto Italiano di Numismatica

¹⁶¹ See LOHR, *Führer durch die Kaiserliche Österreichische Münzkabinete* (1935), also *Kunsthistorisches Museum, Führer durch die Sammlungen* (1958), pp. 33–39. For the activities of the coin cabinet in the second quarter of this century, see LOHR, "Ein Vierthundertjähriger Wiener Münzkabinet" (1958).

¹⁶² MARTIN, "Suisse" (1961).

¹⁶³ KUPF, *Geld und Wirtschaftsgeschichte Mittelalters* (1946); GELDER, *Les Médailles de la Belgique* (1954, 1955), and "Les fonctions extérieures du Cabinet des Médailles de La Haye" (1957).

¹⁶⁴ HECKSCHER and RASMUSSON, *Sweden's coins* (1960). See also SCHWABACHER, "Die Neuenrichtungen" (1959).

¹⁶⁵ See also the guidebook to the Copenhagen Coin and Medal Cabinet, *Mønt og Medaillesamling, en Vejledning* (1959).



Fig. 44. —OLD ELEGANCE AND MODERN SIMPLICITY IN COIN EXHIBITS—the Mint Museum in Paris and, opposite, the Royal Mint Cabinet in Stockholm (Div. of Numismatics photo, left, and photo courtesy Kunglig Myntkabinettet, Stockholm).

in Rome under the title "Vita dei medaglieri," not only involves major museum centers such as Naples and Rome, but also it spreads far out to Gela, Syracuse, or Palermo in Sicily, and to Milan or Modena in the north.

Spain reaffirms its reputation in numismatics with a series of important publications, outstanding periodicals, and excellent coin exhibits. *Numisma*, published since 1951 in Madrid, and *Numario Hispanico*, issued from the same city since 1952, are only two examples of excellent journals which devote their pages to scholarly research in Spanish and Latin American numismatics. Among the numerous Spanish public coin collections, one should mention at least the old and wealthy accumulation of ancient and medieval coins in the Museo Arqueológico Nacional in Madrid¹⁶⁷ and the Gabinete Numismático de Cataluña in Barcelona, with its very in-

formative exhibit on the history of Spanish and world currencies.¹⁶⁷ At the present time, the Fábrica Nacional de Moneda y Timbre in Madrid is preparing, under L. August and Fernando Gimeno Rúa, a grandiose exhibit on the history of money and medallie art in Spain.

In Portugal, the numismatic tradition of the past centuries finds its expression in a continued interest in building up the public collections. A nation of only a little over eight million people, Portugal can claim the honor of having a national coin museum. Since 1933, the Museu Nacional de Numismática, housed in the Casa de Moeda in Lisbon, has consolidated most of the outstanding coin collections.¹⁶⁸ In the provinces, the Museu Nacional de Soares dos Reis in Oporto,¹⁶⁹ the coin cabinet at the University of

¹⁶⁷ For earlier publications of the museum, see MALEU Y LIOPIS, *Catálogo de las monedas* (1934) and *Catálogo de las monedas francesas* (1936); also RIVERO, "El Gabinete numismático del Museo Arqueológico de Madrid" (1957).

¹⁶⁷ For the guide to the collection, see AMORÓS, *Noticia acerca del Gabinete Numismático de Cataluña* (1949).

¹⁶⁸ BATALHA REIS, "Museus e colecções publicas" (1946).

¹⁶⁹ For a catalog, see PERES, *Relação das moedas gregas, romanas* (1942).



Coimbra, the collection at the library in Funchal (Madeira), and a collection even in Nova Goya (Goa) are evidence of the interest in and affection for coins in this relatively small Latin nation.

In Israel, the Kadman Numismatic Museum of Tel Aviv, under Arie Kindler, presents a series of exhibits illustrating the monetary history of that nation.

The general upsurge in numismatic interest which took place after World War II can be noted also in countries beyond the Iron Curtain—Czechoslovakia, Poland, Romania, Hungary. The trend there finds expression in several publications centered chiefly around national academies or leading museums and in the general tendency to reorganize public collections,¹⁷⁰ often the major repositories for private collections.

In the United States equal attention has been given to the increase of study and reference collections and to public exhibitions. Many small and large coin exhibits fill show rooms in museums, universities, cultural institutions, and even banks. The American

¹⁷⁰ Cf. KIERSNOWSKI, "The More Important Public Numismatic Collections of Poland" (1961).

Numismatic Society, with a large specialized staff concentrates mainly on building up its collections,¹⁷¹ whereas other organizations, such as the Chase Manhattan Bank or the Money Museum of the Detroit National Bank, place their emphasis on exhibitions. The oldest public collection in the country, the cabinet of the Philadelphia Mint, was transferred in 1923 to the Smithsonian Institution in Washington and became part of one of the largest coin collections on exhibit in the United States and perhaps in the entire world. Located in the United States National Museum of the Smithsonian, this exhibit is arranged to illustrate not only the evolution of money in the world but also history as it is reflected in coins. The exhibit is visited yearly by millions of people.

NUMISMATICS IN THE UNIVERSITIES

As an academic discipline, numismatics had an early beginning in 1738 in Halle, Germany, with Johann H. Schulze's "collegium privatum." For a long time afterward, however, the discipline found

¹⁷¹ See ADLSON, *Annals of Numismatics*, 5: 6 (1959).

only scattered acceptance, due in part to the lack of teachers in this field. Occasionally, professors of history or the history of art, such as F. Creutzer in Heidelberg, J. Overbeck in Leipzig, and especially Theodor Mommsen at the University of Berlin, would use coins extensively in their courses. Today Germany continues to lead in this academic tradition. The Universities of Berlin, Hamburg, Munich, Heidelberg, Göttingen, Münster, and Braunschweig offer courses in numismatics.

In most of the other European countries, including eastern Europe and Russia, it is taught at least at the major universities, often as an adjunct of archeology and history, or at the national libraries, along with diplomatics and epigraphy.¹⁷² The history of

coins has been taught since 1795 at the Bibliothèque Nationale in Paris, which has had among its professors such men as Millin, Raoul Rochette, and the famous François Lenormant. Portugal introduced the study of numismatics in 1801 at the University of Coimbra, and the Biblioteca Publica in Lisbon, from 1844 to 1911, offered numismatics as a compulsory course for librarians and archivists. The outstanding historian and epigraphist José Leite de Vasconcellos taught there from 1888 to 1911. In Spain, the Escuela Superior de Diplomática in Madrid, since the late 19th century, and the Universities of Madrid and Barcelona, since the early 20th century, have offered courses in numismatics. Their example has been followed by twelve other Spanish universities.

NUMISMATICS IN THE UNITED STATES

We can assume that preoccupation with coins in the American colonies did not differ greatly from that in Europe. Certainly the attention given to classical education in the 18th century would have stimulated an interest in antiquities. Despite scant documentation for the beginning of numismatics in this country, scattered information from the second half of the century helps us to construct a reasonably accurate picture of an ancient science in a young nation.

A certain Swiss gentleman, Pierre Eugene Du Simitiere (1736-1784), who settled in New York and later moved to New Jersey, deposited his collection of about 135 coins with a tradesman as collateral security.¹⁷³ It is probable that John Smith, who accepted it, must have heard of or seen similar collections; otherwise, one doubts the good Quaker merchant would have considered obsolete coins as a trustworthy investment.

Another early piece of information is supplied by the diary of the Rev. William Bentley of Salem, Mass., who in 1787 presented to Judge Winthrop of Cambridge some Swedish coins and medals. The diary suggests that Rev. Bentley was one of the early coin enthusiasts in this country; under the year 1791 we find the following entry: "I entertained myself

with his [Winthrop's] curious cabinet of coins and medals. It was large and not with any antiques but it had a great variety of small pieces and may be deemed the best we have in this part of the country."¹⁷⁴ The same minister obtained some Chinese coins from a sea captain named West and coins of other nationalities from a Captain Elkins and a Captain Hodges.

It is evident that collecting among intellectuals was not limited to a few isolated cases. By midcentury the "collector-donor" type, the person interested in disseminating knowledge of coins, already had appeared. In 1765 a tutor at Harvard, William Molyneux, donated 250 French coins to the college.¹⁷⁵

In 1752 the Library Company in Philadelphia received a donation of coins, and later the American Philosophical Society in the same city became the recipient of various collections. An entry in the *Early Proceedings* of the society states, under the date May 15, 1801, that "Mr. Vaughan presented 32 copper coins or medallions from the Soho mint [England] invented by Mr. Boulton with a list and card describing the principles."¹⁷⁶ More interesting are the entries of May 3, 1805, and July 18, 1806, mentioning donations by President Thomas Jefferson. The earlier entry reports that a group of 150 Roman

¹⁷² BABELON, "Les origines et l'histoire de l'enseignement de la numismatique" (1908); BATALHA REIS, "O ensino da numismática em Portugal" (1946); BURKHARDT, "Die Numismatik an der Universität Basel" (1958).

¹⁷³ GILLINGHAM, "An Eighteenth Century Coin Collector" (184).

¹⁷⁴ The diary is discussed in an unsigned article, "Oldest Coin Collection Recorded in the U.S." (1907).

¹⁷⁵ STORER, "The Harvard Collection of Coins and Medals" (1922); see also the same title of an unsigned article in *The Numismatist* (1922).

¹⁷⁶ P. 312.

bronze coins, ranging from Augustus to Tiberius, which were given to Jefferson by Weinwich, the Secretary of the Danish Royal Society of Heraldry and Genealogy, was deposited at the American Philosophical Society by the President, who believed "them well worthy its acceptance."¹⁷⁷ Brief entries of such gifts can be found in subsequent years in the *Early Proceedings* of the American Philosophical Society up to 1837, when a committee was assigned to arrange the society's coins and medals.¹⁷⁸

Coins came to be discussed even in the United States Congress. On March 9, 1822, the Joint Committee for the Library submitted a report on a collection of French medals—including some coined in France pertaining to events in the American Revolution—which a certain George William Erving had wanted to present to the Library of Congress. This group of medals apparently had been lost at sea with the brig *Factor*. The interesting point here is that the report recommends the purchase of other medals which had been struck in France and which related to events in the Revolution.¹⁷⁹

In New York the American Museum of the Tammany Society purchased coins in 1793 and 1796. By 1811 the museum possessed about 300 ancient coins—which, unfortunately, were stolen a few years later.

From these years date the beginnings of the mint collection in Philadelphia. Adam Eckfeldt, chief coiner at the mint, "lead as well by his own taste as by the expectation that a conservatory would some day be established, took pains to preserve master-coins of the different issues of the mint and to retain some of the finest specimens, as they appeared in deposit for recoinage."¹⁸⁰ This same Eckfeldt in 1825 deposited at the Franklin Institute in Philadelphia forty medals which had been struck at the mint.

Philadelphia was proving to be a leading cultural center also in numismatics. In that city, in 1788, James Hall (1773–1861) from Allentown, Pa., made an early start as a collector, expanding his activities in later years by corresponding with numismatists in the old world and by sponsoring the creation of the first numismatic association in America.

To J. Hall, 18–8, civic citizen from Philadelphia, "who had long felt the want of such an association, organized a society for the purpose of promoting their favorite study in a more systematic and satisfactory manner. The mania for coin collecting was then raging here, and desires had arisen with very many persons to become better acquainted with the science."¹⁸¹ This is a statement from one of the founding members of the Numismatic and Antiquarian Society of Philadelphia. It is surprising to note the serious trend which coin collecting took in those early days, with people exhibiting such enthusiasm and a tendency to approach numismatics as a science. The diversified interests of this Philadelphia circle are demonstrated clearly in the papers read at the meetings by its members, such as Henry Phillips, Jr., on classical and American numismatics, or Richard Davids, on medieval issues.

Shortly after the Philadelphia society was organized, a second association was formed in April 1858 in New York by a group of collectors under the leadership of Augustus Sage, a well-known coin dealer. The New York American Numismatic Society, which temporarily changed its name in 1864 to American Numismatic and Archaeological Society, was represented by an extremely active group of people "prominent in civic affairs" like Edward Groh, Dr. J. H. Gibbs, and H. Whitmore.

Joseph N. T. LeVick (1831–1908), supported by a few others, promoted the idea of a periodical, and in 1866 he initiated the publication of the *American Journal of Numismatics*. The purpose of this journal was defined by one of its founders as resting on the fact that "all this time there has been no publication attempted which, besides being of historical value, should act as check upon all nefarious and improper acts, either in the manufacture, collection, or sale of coins and medals."¹⁸²

A series of similar organizations sprang up—in 1860, the Boston Numismatic Society; in 1864, the Rhode Island Numismatic Association in Providence, followed by the Vermont Numismatic Society in Montpelier, and the Western Pennsylvania Numismatic Society in Pittsburgh. The respective constitutions and bylaws were published as follows: Boston, 1867; Providence, 1865; Montpelier, 1877; and Pittsburgh, 1885. All of these groups attest to the steadily increasing interest in coin collecting in the eastern

¹⁷⁷ *Proceedings* (1867), p. 3.

¹⁷⁸ Issue of May, 1866, p. 1.

¹⁷⁷ *Ibid.*, p. 374.

¹⁷⁸ *Ibid.*, pp. 387, 464, 659, 670, 705; see also Phillips, *Notes Upon the Collection of Coins . . . Deposited by the Numismatic and Antiquarian Society* (1885).

¹⁷⁹ U.S. CONGRESS, "Report of the Library Committee" (1822).

¹⁸⁰ DE BOIS, *Brief Account of the Collection of Coins*, p. 6.

states. To them might be added the Numismatic and Antiquarian Society of Montreal, established in 1863 in Canada.

Intense activity in collecting and studying the most diversified categories of coins from all over the world now set in. Still very strong was the interest in early coinages, with special preference given to the Roman. At the same time, however, there could be observed a growing preoccupation with the national coinage. The reports of the meetings of the numismatic associations accurately reflect this general trend. We learn, for example, that in the Boston circle, one of the most traditional and representative groups on the East Coast, William Sumner Appleton (1840-1903), possessed a remarkable collection which was well-defined both in the classical and in the American field. This collection today is housed in the Massachusetts Historical Society. Jeremiah Colburn (1815-1891), editor of the *American Journal of Numismatics* after 1871, F. G. Seavy of Boston, and Robert C. Davis of Philadelphia, all had authoritative collections of American coins.

A distorted picture of numismatics in the United States would be given if the implication emerged that interest was limited only to the eastern coast. Contemporary accounts in the 1860s—from Fort Wayne, Ind., concerning a miscellaneous collection of 2,000 pieces; from Bellevue, Ohio, where a collector was robbed of his "copperheads"; from Omaha, Neb., where Byron Reed assembled an outstanding collection of ancient, modern, and American coins; and a report of J. Henry Applegate on the situation in collectors' circles in California—indicate the extent of numismatic interest in the central and western states, which until recently was not channeled into well-organized efforts as in the East.

Throughout the country, at the same time, scores of handbooks and publications on a variety of other numismatic subjects were started, reflecting research of the midcentury which often centered around the paper currencies of colonial times. Such efforts probably were motivated, in part, by a desire to evaluate the unfortunate financial experiences of the preceding century.

Among other publications of the period should be mentioned William M. Gouge's *Short History of Paper Money and Banking in the United States* (1833), William Sumner's *History of American Currency* (1874), and especially Joseph B. Felt's *Historical Account of Massachusetts Currency* (1839), which was developed from two

lectures given before the Massachusetts Historical Society. In a few decades, Henry Phillips published his excellent *Historical Sketches of the Paper Currency of the American Colonies* (1865-1866), which is still an indispensable reference.

Around the middle of the century, research on coins was largely dominated by people connected with the national mint: Jacob R. Eckfeldt (1803-1872)¹⁵³ and William E. Du Bois (1810-1881),¹⁵⁴ assayers, and later in the sixties, James Ross Snowden (1809-1878), director of the Mint in Philadelphia. *The Manual of Gold and Silver Coins of All Nations Struck Within the Past Century*, published in Philadelphia in 1842 by Eckfeldt and Du Bois, is, in spite of omissions, an outstanding handbook. Although not pursuing high scholarly standards, this book, which contains detailed descriptions of the coinage of every country with useful accompanying tables on the metallic fineness of coins resulting from their own assays, was an invaluable aid for collectors.

In 1846 Du Bois published *A Brief Account of the Collection of Coins Belonging to the Mint of the United States*, in which he gives, in addition to a conspectus of the various groups of coins represented, a short history of the national collection. Later, in 1860, James R. Snowden published a more detailed report under the title *Description of Ancient and Modern Coins in the Cabinet Collection of the Mint of the United States*.¹⁵⁵ The collection of the Mint was established officially in June 1838 although, as we have seen already, its early beginnings can be traced to the 1790s. Du Bois' book mentions the provenance of certain pieces: a few ancient coins were given by Jacques G. Schwarz, U.S. Consul in Vienna; some Byzantine and Greek pieces were donated by John P. Brown, dragoman for the U.S. Embassy in Constantinople; and a number of Greek and Bactrian coins came from the East India Company.

In 1845, John L. Riddell, melter and refiner at the U.S. Branch Mint in New Orleans, published in that city *A Monograph of the Silver Dollar, Good and Bad*, a book which reflects the preoccupations of the period with actual monetary problems.

¹⁵³ See Du Bois, "A Brief Sketch of Jacob R. Eckfeldt" (1872).

¹⁵⁴ See obituary of William E. Du Bois in *American Journal of Numismatics* (1881).

¹⁵⁵ For other catalogs of the Philadelphia Mint collection see JOHNSTON, *A Visit to the Cabinet* (1876); SMITH, *Visitor's Guide* (1885); McCURE, *An Index to the Coins* (1891; 1895); U.S. BUREAU OF THE MINT, *Guide to the Collection* (1913), *Catalogue of Coins* (1912; 1913; 1914) and *Catalogue* (1928).

The *Manual* by Eckfeldt and Du Bois, mentioned above, found a parallel work in Montroville W. Dickeson's *The American Numismatic Manual* (1859), which, despite the criticism it received, went through three editions by 1865. As faulty as much of the information was, the basic concept of the book helped it to achieve a standard which was never equaled in later publications of this kind.

The New York group claimed as its leading men Charles I. Bushnell (1826-1883), a well-known collector and author of a book on tokens, *An Arrangement of Tradesmen's Cards, Political Tokens, etc.* (1858), and John Howard Hickcox, author of *An Historical Account of American Coinage* (1858).

But the classic work on American numismatics was yet to come. In 1875 *The Early Coins of America and the Laws Governing Their Issue* was published in Boston by Sylvester S. Crosby, a jeweler from New Hampshire who had established his business in Boston. This work can be regarded as the most outstanding contribution of the United States to numismatic research in general.

In this book one of the thorniest problems in the history of American coinage, the issues of the Colonies, found an authoritative presentation which has never been surpassed. The basic concept of the work was to consider coins as essentially an expression of their time. They were thoroughly examined in the light of contemporary documents and their sequence was established through detailed die studies. Crosby's system of submitting the coin image to a painstaking examination, noting the minutest changes in the die as a clue to assigning the sequence within a given group of coins not otherwise datable, proved invaluable in many instances and frequently was used by other numismatists. Unfortunately, from a means his system has very often become an end in itself, its use degenerating into a senseless pursuit, as can be seen in recent publications which promote research into the progression of die cracks as an exclusive aim of numismatics— an activity which entirely neglects Crosby's historical approach.

A strong interest in medals toward the end of the century emerged again; they were studied from the historical rather than the artistic point of view. Nonetheless, Joseph F. Loubat's *Medallie History of the United States of America, 1776-1876* (1878) cannot fail to impress the reader with its artistically executed plates. A few years later, William S. Baker published the results of his research on portraits of the first American president in his *Medallie Portraits of*



Fig. 45.—SYLVESTER SAGI CROSBY (d. 1914), American numismatist (photo from *The Numismatist*).

Washington (1885). In the same period Charles W. Betts (1845-1887) achieved a solid reputation with his *American Colonial History Illustrated by Contemporary Medals* (1894).

Large and highly specialized collections were formed near the close of the century, and many rarities sold in Europe found their way to this country. The collections of classical coins of Frank S. Benson, Clarence S. Bement, and J. Pierpont Morgan were a challenge to the best collections on the continent. Enrico Caruso's cabinet of gold coins and Waldo C. Newcomer's collection of South American gold and silver coins were among the largest of their kind ever assembled.

In the field of American coins the number of cabinets grows to such an extent it would be impossible to

give more than a selection. The sale catalogs of the period, such as those published by the Chapman firm in Philadelphia, disclose many collectors who built significant cabinets. In 1889 there were over four hundred American collections which were known in Europe, as reported in *Guida numismatica universale*¹⁸⁶ by Francesco and Ercole Gneocchi. Among the early collections should be mentioned the coin cabinets of Joseph J. Mickley¹⁸⁷ of Philadelphia and of Matthew A. Stickney of Salem, Massachusetts.

Of special interest are the donations made to cultural institutions, colleges, and public libraries. Emmanuel J. Attinelli's *Numisgraphies, or List of Catalogues* (1876) and a recent report (1960) from the International Numismatic Commission, include many such recipients, among which are historical societies in New York, Philadelphia, Long Island, Massachusetts, Missouri, and Wisconsin, the Mercantile Library Association in St. Louis, the New York State Library in Albany, the Hartford Connecticut State Library, the Omaha Public Library, as well as many universities and colleges.

Through donations of entire, well-rounded collections or single groups of coins, many colleges have accumulated excellent study material. Harvard's more select ancient coins have been published by George Hanfman and Miriam S. Balmuth in a very attractive booklet entitled *The Fogg Art Museum of Harvard University: Ancient Coins* (1956). In Washington, Dumbarton Oaks, under the trusteeship of Harvard, has an outstanding collection of late Roman and Byzantine coins and gold medallions, which were published in 1958 by Prof. Alfred Bellinger.¹⁸⁸ Bryn Mawr College has a remarkable collection of Greek coins which have been cataloged by Cornelius Vermeule and reported in his "Greek Coins in the Elizabeth Washburn King Collection" (1956). The *Numismatist* of 1927 in a brief note mentions the collection of 10,000 coins which the Rev. W. H. Owen gave to Yale. Earlier accounts of such donations at Yale can be found in *Roman Family Coins in the Yale College Collection* (1860) by Fisk P. Brewer and especially in the *Catalogue of the Cabinet of Coins in the Yale Collection*, published anonymously in 1863 and reissued by Jonathan Edwards in 1880 as the *Catalogue*

of the Greek and Roman Coins in the Numismatic Collection of Yale College. The collection in Yale's Sterling Memorial Library is exceptionally well represented in classical coins, including also many rarities in the United States series from the Francis P. Garvan collection. Recently, Margaret Thompson and Alfred Bellinger published an account of a hoard of Alexander drachms from the Yale collections.¹⁸⁹ Dartmouth College has had two recent numismatic publications on Roman and on Byzantine gold coins.¹⁹⁰ Johns Hopkins University (which received the famous J. W. Garrett Collection), Princeton, Columbia, Vassar, St. Louis, the University of Wisconsin, the Oriental Institute of the University of Chicago, the Berkeley branch of the University of California, the University Museum in Philadelphia,¹⁹¹ all are in possession of old and important collections.

Often, universities sponsor numismatic studies in connection with their publications in economics or as a part of the reports on archeological expeditions. Since the late 19th century, Johns Hopkins University has issued many interesting studies in economics—some of which relate to the history of money and prices—in two series: Studies in History and Political Sciences, and Ancient Economic Studies. Many reports on coin finds from archeological excavations under the direction of colleges and universities have been published by such authors as Edward T. Newell (for the excavation at Dura-Europos), David M. Robinson (Olynthus), Margaret Thompson (Corinth and Athens), Dorothy H. Cox (Curium and Gordion), and especially Prof. Alfred Bellinger (Corinth and Dura-Europos, among many others).

American universities sometimes make use of numismatics—if only tangentially—especially in the classical area. In the United States, the general subject is not part of the regular curriculum, but some institutions of higher learning occasionally offer lectures on numismatic problems, as Columbia University did in 1908, when Prof. T. Whittemore presented a course on coins as they are related to classical art. Since history professors sometimes are involved personally in numismatic research, coins and medals

¹⁸⁹ THOMPSON and BELLINGER, "A Hoard of Alexander Drachms" (1955).

¹⁹⁰ See STEARNS and HALL, *Byzantine Gold Coins from the Dartmouth College Collection* (1953); TERRACE, *Some Historical Roman Coins . . . at Dartmouth College* (1958).

¹⁹¹ See, for example, MELES, *Fatimid Coins in the Collection of the University Museum, Philadelphia* (1951).

¹⁸⁶ Second edition, pp. 419-454.

¹⁸⁷ For a biography, see DE BOIS, J. Mickley: *The Interesting Career of a Lawyer, Antiquarian, and Museumian* (1878).

¹⁸⁸ See BELLINGER, "Roman and Byzantine Medallions in the Dumbarton Oaks Collection" (1958).

occasionally are used in history and art classes. In recent years the American Numismatic Society has provided annual summer seminars for university graduates who are interested in numismatics as an independent discipline or as an area related to their historical research.

Toward the latter part of the 19th century the number of new periodicals increased noticeably. A general list should include the *Coin Collector's Journal*, founded by J. W. Scott and E. Frossard in New York City in 1875 and continuing until 1954, and *Numisma*, issued from Irvington, N.Y., from 1877 to 1891. Most of these periodicals, however, were short-lived: *Numismatic Pilot to Ancient Coins and Their Uses* (La Grange, Ky., 1876-1877), *Coin and Stamp Journal* (Kansas City and New York, 1875-1877), *The Numismatic Journal* (North Adams, Mass., 1877-1878), *Coin Journal* (Lancaster, Pa., 1878-1882), and *Mason's Coin and Stamp Collector's Magazine* (Philadelphia, 1867-1872). With the exception of the *American Journal of Numismatics*, a more advanced periodical edited first by the Boston Numismatic Society and later by the American Numismatic Society in New York from 1866 to 1924—the purpose of most of these journals was to serve the collector in his basic need for communication and exchange of information.

Proceeding on this premise, a small journal called *The Numismatist* was started in 1888 by Dr. George F. Heath of Monroe, Mich. His ambition to create closer contacts among collectors materialized in an organization called the American Numismatic Association. This society, numbering today over 20,000 members, was begun in Chicago on October 7, 1891, by six men. Its official publication, *The Numismatist*, with a widely diversified content, is the most important periodical for the American collector who is interested in every field of collecting. Enjoying a wide distribution is another very popular magazine, *The Numismatic Scrapbook*, issued since 1935 from Chicago.

Although interest in collecting United States coins has been extremely keen in the past eighty years, numismatics as a science seems to have been forgotten or confined to the work of economists. Descriptive catalogs of various denominations and their varieties, such as Martin L. Beistle's *Register of the Half Dollar Die Varieties and Sub-Varieties* (1929) or Howard Newcomb's *United States Copper Cents, 1816-1857* (1944), outnumbered the more historical studies like Bauman Belden's *Indian Peace Medals* (1927).

More prevalent, however, were studies on ancient and foreign numismatics, such as Anne Birt's *Electrum Coinage of Lampsakos* (1914), and Albert Frey's *Dictionary of Numismatic Names* (1947), as well as comprehensive works on the general currencies of the United States, such as A. Barton Hepburn's *History of Coinage and Currency in the United States* (1903) or C. Nettel's *Money Supply of the American Colonies Before 1720* (1934). The study of Confederate currency, as reflected in Raphael P. Thian's very rare *Register of Issues of Confederate States Treasury Notes*, published in the late 19th century, again became popular in 1915 with William W. Bradbeer's *Confederate and Southern State Currency*. The subject was reexamined in 1917 by Philip H. Chase in *Confederate Treasury Notes: The Paper Money of the Confederate States of America* and in 1954 by Richard C. Todd in his excellent historical study *Confederate Finance*.



Fig. 46.—ALBERT R. FREY (1878-1926), American author of *Dictionary of Numismatic Names* (photo from *The Numismatist*).

In the early decades of the twentieth century emerged a man who succeeded in establishing the prestige of American research in the field of scientific numismatics—Edward T. Newell (1886-1941), Yale graduate and, from 1916 until his death, president of the American Numismatic Society. A distinguished student of outstanding reputation in the numismatic world, he revolutionized the field of ancient Greek numismatics by regrouping and relating certain coinages of Alexander the Great on an entirely new and scientific basis.

At the same time he set in motion a publishing trend which helped to place the United States among



Fig. 47.—EDWARD T. NEWELL (1886-1941), leading American authority in ancient numismatics (Div. of Numismatics photo).

the leading nations in numismatic research. On his initiative the American Numismatic Society began to publish in 1920 various studies in a series called *Numismatic Notes and Monographs*. To this title subsequently were added others: in 1938, *Numismatic Studies*, a series devoted to works of larger size; in 1946, *Museum Notes*, an annual confined to brief articles written chiefly by the museum staff; in 1947, *Numismatic Literature*, an excellent bibliographical review; and in 1950, the *Hispanic Numismatic Series*, a joint publication in cooperation with the Hispanic Society of America.¹⁹²

As a result, in subsequent decades many outstanding works in the field of ancient and foreign numismatics have been published. Newell's classic studies, *The Coinage of Demetrius Poliorcetes* (1927), *The Coinage of the Eastern Seleucid Mints* (1938), and *The Coinage of the Western Seleucid Mints* (1941),¹⁹³ were followed by a series of excellent monographs by Sydney P. Noe, Alfred Bellinger, Samuel R. Milbank, and Louis West in the field of ancient numismatics. In order to complete the picture, one should add a few representa-

¹⁹² For more detailed information, see ADELSON, *American Numismatic Society* (1958).

¹⁹³ For his bibliography, see *The Numismatist* (1941), pp. 268-269.

tive names in various other specialties: George C. Miles on Islamic and Ibero-Hispanic coinages, Howland Wood and Robert Nesmith on Central and South American problems, Harrold E. Gillingham and James C. Risk on orders and decorations, William H. Dillistin and Kenneth Scott on bank notes and counterfeiting, and Sydney P. Noe and Eric Newman on American numismatics.

In reviewing the past few decades of numismatic research in this country, one cannot escape the impression that almost all scholarly activity has been centered around the publications of the American Numismatic Society. Even in the field of national numismatics only sporadic and unsystematic attempts have been made by other groups to direct research toward higher scholarly standards. Walter Breen's many contributions to various topics of American interest have not yet been channeled into a major historical study.

On the other hand, the United States has produced excellent handbooks which are a genuine asset to general numismatics on the collector's level. Wayne Raymond has published a series of guidebooks on modern world coinages of the 19th and 20th centuries as well as on United States coins.¹⁹⁴ His tradition has been continued by Richard S. Yeoman with a yearly edition on the United States series,¹⁹⁵ and now extended by Yeoman to modern foreign coinages (*A Catalogue of Modern World Coins*, 6th ed., 1964). Robert Friedberg's *Gold Coins of the World* (1958) and especially his handbook *Paper Money of the United States* (5th ed., 1964) present many useful features for collectors. Worldwide acceptance has been accorded to John S. Davenport's handbooks on the dollar-sized silver coins of Europe and Germany since 1700.¹⁹⁶

More scientifically significant contributions have come from the Economics Department of the University of Pennsylvania, with such works as Anne Bezanon's *Prices and Inflation During the American Revolution* (1951), and from the Harvard Department of Economics, as reflected in the series *Harvard Economic Studies*. Both have published special studies concerned with historical aspects of monetary and price problems and with banking in Europe as well as in the early periods of this country.

¹⁹⁴ *Coins of the World: Nineteenth Century Issues* (1953), *Coins of the World: Twentieth Century Issues* (1955), *Standard Catalogue of United States Coins* (1957).

¹⁹⁵ *Guidebook of the United States Coins* (1963).

¹⁹⁶ *European Crovans Since 1800* (1947), *German Talers Since 1800* (1949), *German Talers 1700-1800* (1958), *European Crovans 1700-1800* (1961).

For new perspectives on research into American numismatics we have to turn to the Numismatic Notes and Monographs series of the American Numismatic Society. Sydney P. Noe's studies on the early coinages of Massachusetts and on the Castine hoard¹⁹⁷ and the brilliant studies of Eric Newman on other topics of colonial numismatics¹⁹⁸ have opened a new and promising era for scientific research into American currency.

Numismatics as the science of money viewed within the multiplicity of historical phenomena appears to be successfully established. The words written a century ago by James Ross Snowden seem best to express our thoughts:

In giving a history of the coins of the United States we shall not go so far into the details of the subject as to take notice of the different "varieties"

¹⁹⁷ *New England and Willow Tree Coinage of Massachusetts* (1943), *Oak Tree Coinage of Massachusetts* (1947), *Pine Tree Coinage of Massachusetts* (1952), *The Castine Deposit. An American Hoard* (1942).

¹⁹⁸ *Coinage for Colonial Virginia* (1956) and *Secret of the Good Samaritan Shilling* (1959).

caused by cracked dies, the addition or omission of a leaf in the laurel, a larger or smaller letter in the legend or inscription, and the common or other minute and scarcely definable differences which are found, upon close inspection, to exist in the coins of nearly every year in which they have been issued. These little technicalities may be important to those collectors of coins who pay more regard to the selfish desire of having something which no one else possesses than to the historic or artistic interest which attaches to a coin. We therefore confine ourselves to an illustration of those changes in the types of the coins which are of material and definite character, and which are produced by design and not by accident, introducing, as we proceed, other facts in regard to the coinage which are more purely historic than the description, and which may be of interest or tend to throw some light upon controverted points.¹⁹⁹

¹⁹⁹ *Description of Ancient and Modern Coins*, p. 101.

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