
# NUMISMATIC ARCHAEOLOGY OF NORTH AMERICA

## A FIELD GUIDE

Marjorie H. Akin, James C. Bard, and Kevin Akin

# Numismatic Archaeology of North America



*Numismatic Archaeology of North America* is the first book to provide an archaeological overview of the coins and tokens found in a wide range of North American archaeological sites. It begins with a comprehensive and well-illustrated review of the various coins and tokens that circulated in North America with descriptions of the uses for, and human behavior associated with, each type. The book contains practical sections on standardized nomenclature, photographing, cleaning, and curating coins, and discusses the impacts of looting and of working with collectors. This is an important tool for archaeologists working with coins. For numismatists and collectors, it explains the importance of archaeological context for complete analysis.

**Marjorie H. Akin** specializes in numismatics within historical archaeology, and her publications include contributions to Greenwood's *Down by the Station: Los Angeles Chinatown 1890-1933*, Costello's *The Luck of Third Street*, and many articles and reports about Asian coins recovered in North America.

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# PREFACE

Back in 2008 the subject of a field guide to numismatic archaeology came up in conversation between Mark Warner and Jim Bard. During 2011 Jim Bard consulted with Margie Akin on some Chinese coins found at Sandpoint, Idaho, and he mentioned the idea to her. "Good idea," she said. Jim Bard spoke with Mark Warner again, who thought Left Coast Press, Inc. might be able to fit such a book into their list. Recruiting Margie's husband Kevin Akin as an experienced numismatist to help with details, the Akin/Bard/Akin team was complete, and four years later this book is the result.

Thousands of books on numismatics have been published; many of them deal with coins recovered archaeologically in Europe, Asia, and Africa. But the field of North American numismatic archaeology has been the subject of short articles, small sections of reports, and very few theses and dissertations. No books, until this one.

Jim Bard's father Robert introduced him to coin collecting when he was young. His work, most of his life has been in archaeology of the practical kind, involving lots of digging and the composition of a great many reports. Margie Akin was involved in archaeological work from her late teens and started collecting coins a little later. The two interests came together when she returned to the university after a break to have four children, and her work on the coins recovered at Riverside Chinatown led to her choice of a dissertation topic. Kevin Akin, now a retired steam engineer, got started as a coin collector at the age of eight when his mother gave him a handful of old Chinese coins her brother had obtained in China in 1930. All three are interested in a broad range of subjects, and see numismatics and archaeology as keys to understanding the history of our continent, after the encounter of two worlds in 1492, in details that cannot be extracted from other sources.

This book was a team effort from the beginning, and during our initial discussions we determined that we wanted to accomplish four main things.

1) We wanted to provide a resource for archaeologists who work with numismatic material but know little about the subject and want to know more. We wanted to produce a volume that went beyond identification of coins or tokens and put numismatic artifacts into a historical context in order to improve our understanding of what the artifacts represent. We hoped to make established numismatic vocabulary and taxonomies easy for archaeologists to use—something that will increase the usefulness of numismatic data, especially for regional and multisite studies.
2) We wanted to provide numismatists with a deeper understanding of the history of coins and tokens that may be represented in their own or public collections. Most serious coin collectors like to learn about their holdings and also want to connect themselves to the past by sharing information with professionals. We are attempting to provide a window into the world of archaeologists, into what they can learn from the artifacts, and how they are used in larger studies. We hope that our efforts are both informative and interesting.
3) We know that there has been mistrust and misunderstanding between many archaeologists and numismatists, especially those who are collectors. By providing a description of both fields and presenting them together in the same volume we hope to help initiate new, collaborative work that can expand our understanding of the North American past.
4) We wanted to contrast North America's history of the use of the many forms of currency with the situation in other parts of the world. This is a necessary first step in understanding the unique and special aspects of the numismatic archaeological record of this continent.

As the work progressed, our understanding of what each field had to offer, the other expanded, and so did the book. Then we had to pare the voluminous text down again and match the photos and other images with the manuscript. It took a team to generate discussion about what we could learn from the archaeological evidence and what was needed to help make that happen. In addition to the authors, several others played key roles in moving the work forward, and they are listed in the acknowledgments.

We hope that readers will learn from and appreciate this volume, even though there are many things it is not. It is not a comprehensive review of all the thousands of archaeological sites where coins have been recovered in North America. It is not a catalog, and it cannot replace the many catalogs needed to identify the many thousands of different coins, and hundreds of thousands of different tokens and medals, that may turn up in North American soil. We refer readers to works on the many subfields that must be explored in identifying and interpreting finds, and we hope this is a help. But this is a gateway book that leads to the larger corpus of works, not a compilation of all information you will need to master the field.

We hope this effort of ours will lead to many more publications in the field of North American numismatic archaeology.

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# ACKNOWLEDGMENTS

Supporting work by experts in several fields was necessary to complete this book. Chief among them was graphic artist Ian Akin, who applied hundreds of hours of his skilled labor to working with all the images and drew a few himself. Sharon Rushing brought bibliographic and anthropological skills, and Carolyn Ulrich used her editing skills and numismatic background to help. Jonathan Briggs helped with photography and wrote up his advice in that field for inclusion in this work. Brian Garvey provided some vivid and accurate drawings. Karen Swope was our reader-in-chief, who criticized us relentlessly to keep the text (relatively) clean and clear. Of course, we overrode them frustratingly often, and all errors and infelicities are the fault of the authors.

The great majority of the photographs were taken by the authors, but many could not have been taken without the cooperation of people who provided the original artifacts to the authors, or permitted photographs of items in their collections or their stock. Some of these people also read partial drafts, supplied obscure facts, or answered questions in their fields. We are probably missing some, but among those who helped us out in these ways we thank Randy Briggs, Joel Anderson, Stephen Album, Alexander Akin, Jeremiah Akin, Isaiah Akin, Shushannah Akin, Norman Sturgess, Karen Bradford, Nadja Richards, Glenn Schinke, Ellen Gerth, David McCarthy, John D. Mutch, Karen Lee, Phil Moore, Gus Green, David Neita, Craig Roubinek, Tom Reynolds, F. Ashley White, Beverly A. Straube, Mike Runge, and Gary Weisz.

Early and important help in the field of numismatics came from Fred Coops, Mel Ulrich, and Richard Doty, who are gone now but never forgotten.

Also gone but not forgotten is Glen W. Akin, whose help in past years was invaluable, and who gave special assistance with numismatic chemistry.

Scholars who have helped by sharing their work and expertise, commented on early drafts, or have otherwise helped hammer out some of the ideas presented in this book include Eugene N. Anderson, Tom Patterson, Julia Costello, Mark Warner, Robert Weaver, Grant Keddie, Thomas F. King, John Goodman, Priscilla Wegars, Sue Fong Chung, Michael Schiffer, Tom Armbruster, and Judy Lee.

We also thank our coworkers, family, friends, and others too numerous to mention, who helped in various ways and tolerated a bit of preoccupation on the part of the authors over the past three years.

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CHAPTER 1

# What is Numismatics?

## Introduction to Numismatics

Numismatics is the study of coins and related ***circulating currency***. Exonumismatics, a subfield of numismatics, is the study of coin-like items, such as ***tokens*** and ***medals***. The shell and stone beads that were once used as money by some Native Americans are also part of the broad field of numismatics and are given some attention here but are not the focus of the book. This book focuses on the coins, tokens, and medals that could be encountered in the course of archaeological excavations in North America.

This book is primarily intended to help archaeologists and historians, as well as people working in the fields of ***material culture*** and museum studies, understand just how much information can be gleaned from the complex objects that are collectively referred to as *numismatic* ***artifacts***. Because they are so complex, combining the economic, political, and aesthetic values of their temporal context, it is not surprising that any archaeologist working with such recovered items would need numismatic resources to help understand their significance. New archaeological methods of analysis and what they can reveal will be of interest to more experienced numismatists who want to deepen their understanding and appreciation of numismatic materials and who wish to learn about the relationship between numismatics and archaeology.

### *Essential Vocabulary*

The definitions of some basic terms listed here have changed over the past two centuries, as have the additional terms that can be found in the glossary. There are also differing definitions and methods of classification used for coins and other circulating currency in the Old World and in the New World. The short review of the history of numismatics presented here will help the reader understand how these differences came about and how that has influenced archaeological analysis in different places. We begin here with some essential definitions as they are used throughout the book.

*Numismatics* is the formal study of coins, tokens, and other similar artifacts; it includes their production and ***circulation*** and their uses and reuses. It also includes, but is not limited to, the investigation of the functions of these items as economic tools in the form of money. Coin and medal collecting is a common feature of numismatics. Although few coin collectors are numismatists, almost all numismatists are coin collectors.

North American numismatic investigations include a high proportion of material that was not issued by a government. This is because the colonial powers usually neglected to provide sufficient small change for the economies of their colonies and because "frontier" and developing areas often had severe shortages of official currency, forcing people to depend on local circulating media (usually tokens) that were not recognized by governmental authorities. For that reason the term numismatics as used in this book includes the subfield of exonumismatics, the study of tokens, medals, and similar material not recognized by any government or central ***authority***.

Numismatics also includes the study of the appearance and morphology of the coins and medals as items of aesthetic value. There are differences in emphasis on particular aspects of numismatics in various parts of the world. In Europe, for example, there is a long tradition of studying the art of numismatics, with a focus on design, the artistic rendering, and ***iconography***. In the United States the emphasis is more often on the function and distribution of the coins and what that reveals about history and how people behaved in relation to the material; although it would be inaccurate to say that aesthetic values are not also appreciated.

Numismatic archaeology is a subfield of archaeology that focuses on the study of coins and related objects, especially those found in formal archaeological investigations, to aid in the interpretations of archaeologically derived information. It uses archaeological methods and theories and applies principles of analysis used on other artifact classes to expand our understanding of the past. Although examining the materials that are recovered is the way we add to existing knowledge of the production, circulation, and other uses and reuses of numismatic

**Figure 1.1.** Ethan White holds a Spanish maravedi recovered in Florida. He is correctly grasping the coin by the edges. Photo credit Dr. Ashley White.

material, it is the human activity, and the culture that drives it, that is the ultimate subject of numismatic archaeology.

In Europe and China where coins have been used for more than two thousand years longer than in the New World, numismatics is an established and widespread tool for archaeological investigations. In the New World, especially North America, numismatic studies are applicable only to the recent historical past, a period not exceeding four hundred years in most areas. As a result, numismatic archaeology is not as well known or well used as a tool for the reconstruction of past human behavior in North America as it is in other parts of the world.

*Money* is any item that is customarily used as a medium of exchange of wealth and a measure of value within a society. Before the development of coins, which occurred about 2,600 years ago in Asia Minor, and simultaneously and independently in China, various ***bartered*** commodities fulfilled money's function. In the past, items such as shells, ***ingots***, and pelts served some of the functions of money. In addition, there were a number of innovative methods of dealing with economic exchanges, such as the potlatch that was a form of wealth redistribution used by Pacific Northwest native peoples. Today we use paper currency, paper and electronic checks, and electronically coded plastic cards issued by banks and individual businesses to supplement coins and paper notes as money.

Perhaps the most useful description of what money is, from an anthropological perspective, can be found in *Monies in Societies* (Neale 1976). According to Neale, money has a number of defining functions and traits. Money functions as: 1) a medium of exchange; 2) a store of value; 3) a unit of account; and 4) a means of payment. There are many ways to obtain money, but generally we work for it so that we can get things that we cannot produce using only our own labor. We go to stores and engage in exchanges, we maintain bank accounts, we accrue and calculate wealth and debts, and we pay debts, all with various forms of money. We recognize that money has regular characteristics that allow us to differentiate what will serve as money (the means to accomplish the activities above), and what will not be accepted as money.

Additional traits of money are that it is durable, portable, quantifiable in a system of small gradations (like a system of weights and measures), and ***fungible*** ([any unit or units of a money are substitutable for any other units of equal value in the same system] Neale 1976:8).


**Figure 1.2.** *Fungible* means that different coins may be substituted for each other within a monetary system, in the right quantities. Thirty-two *quartilllos* were worth the same as eight *reales* throughout Spanish America.

The way to decide whether or not any given form of money will *pass* (serve its anticipated function) is to determine if it has the defining characteristics of circulating money. The most important defining characteristic for this purpose is not, as might be expected, simply the physical appearance of the money (anything identified as a ***forgery*** will not pass even if it looks similar to the original). It is because a social or political authority guarantees the utility of the money for exchange and that the user recognizes the authority of the body that issues the money that makes it valid. In the case of coins, the authority may be shown in an inscription of a government or issuing authority, like a ruling sovereign. In the United States, we use coins and bills issued by the United States Mint and the Federal Reserve because we recognize the federal government as the political and economic authority. We may also use money orders and checks as forms of money because we recognize that the government has given the bank the authority to exchange them for money issued by the government. When checks are refused, it is because there is a question about legitimacy of the authorization to exchange them for money.

The authority that grants legitimacy to money is not always a political entity. Some money, particularly money based on its ***intrinsic value*** (***bullion value***), gains its legitimacy through common consent of the users. During the American colonial period, when there was often a question of which government, if any, was in control in any given area, people relied on the intrinsic value of the metal to define the value of any particular piece of money. In China, during different historic eras, the imperial control wavered, and in some regions imperial control was practically nonexistent. Under these circumstances the intrinsic value

of the copper in the coins gave them their value. Because coin sizes varied over the years, and even genuine coins often had less copper or more zinc than the standards specified, the community where the coins circulated came to a consensus about the value of different coins depending on the coins' *actual* composition instead of what the composition was *supposed* to be.

When a piece of money has intrinsic value due to precious metal content, it may circulate more widely geographically or temporally, that is in areas outside the territory of the issuing authority or after that authority ceases to exist. *Circulating currency* refers to money that is recognized as a medium for conducting economic exchanges within a society. However, in colonial and frontier areas, especially where geographical boundaries and political authority were uncertain, what passed for money is not always so easy to understand. Because it is imperative that archaeological artifacts be interpreted within their appropriate cultural context, one of the goals of this book is to help readers understand why certain coins and tokens are found in particular locations and circumstances. Also, because the reuse of various coins and tokens was a common occurrence in North America, we need to determine what happened to the coins and tokens just before they entered the archaeological record instead of making assumptions based on how those materials circulated in other parts of the world.

Coins are a specific form of money. Coins normally consist of a metal disk of a size relatively easy to transport on one's person, that has various inscriptions related to its value, and that has its origin stamped or ***cast*** on both sides, although there are some exceptions. The earliest coins were composed of metals, such as silver, gold, ***electrum***, and copper, which gave them an intrinsic value, a value based on the market value of the metal itself. As economies and political states became more complex, coins came to represent a value that was based to a greater or lesser degree on the authority of the government that produced them rather than strictly on the amount of precious metal they contained. Such coins, however, normally were only worth their metal value in areas outside the borders of the issuing state.

Coins are initially created to be a form of money, but that initial function can change over time as surrounding circumstances change. Sometimes a government issuing coins and other forms of money, such as paper notes, can break down causing the recognition of the money to fail. Such was the case with Confederate banknotes at the end of the American Civil War. They became ***noncurrency*** souvenirs and keepsakes that had no monetary value but a high symbolic content, both as reminders of the "lost cause" to the supporters of the slave owners and to Union supporters as trophies of victory over the slave power. Their historic or symbolic value can cause people to pay a fluctuating market price for such items as collectibles, but they are not recognized as money in that situation.

In other situations, coins are moved out of the geographic or political region where they function as money, and people find other things to do with them. It was a common practice in many parts of the world to use coins as a decoration on clothing; some coins have medical uses; and some are used as game pieces. There are actually many nonmonetary uses for coins, and if coins end up in an archaeologist's screen after their function has been changed, they can offer different and sometimes greater insights than coins recovered from contexts where they served as money. Although the function of such coins has been changed, they are still coins because they were originally created as a form of money and originally had a different function than tokens and medals.

Tokens look and function like coins but have a different origin. Instead of being issued by a government as money, they are made and issued by a local organization, or for a specific and limited purpose. Tokens are often used as a substitute for coins for a particular purpose, such as paying a trolley fare or a bridge toll. Any organization, from a military unit, to a grocery store, to a bus company can issue a token for use in a limited area for a limited time. Tokens have a standard value set by the organization that produces them, but in some areas they are used by a broader community.


**Figure 1.3.** Token from Malad, Idaho, good for twelve and one-half ***cents*** (one "***bit***") at Clark and Anderson Bar. Wright (1972): item 1364.

Tokens are sometimes produced and used as a substitute for low-value coins. This was a common practice in early colonial areas and rural borderlands where government-issued coins were in short supply, or where it was a matter of personal opinion as to which government was in control. Even in areas with strong governments, a failure of the government to provide low-value coins can lead to the use of tokens as substitutes.

In Mexico, there was a lack of official small change beginning in the sixteenth century. This situation led to the widespread creation of local tokens that lasted until production of tokens was outlawed in 1915. In the sparsely populated areas of the frontier, where there was little economic interaction with the wider world, foreign coins and tokens were often accepted in trade. When it became possible to do so, merchants often created their own small change in the form of tokens. General stores could also use tokens as a coin-like coupon, to give discounts for advertising purposes, and with the advantage of being reusable. Tokens can linger in the nooks and corners of occupied places long after they have become obsolete.

Medals have the same general appearance as coins but have completely different functions. Medals are not used as currency. While it is true that both coins and medals have their value determined by an authority or agency that produced them, the value of medals is not usually economic. Most people are familiar with religious medals. These medals may be made of precious or nonprecious metals, but their value is primarily based on recognition and respect for the religious tradition or organization that produced them, not the value of their materials. The same thing can be said for medals given to the participants and winners of sporting events. While the medals might be made from the same material, the winner of a gold medal at the Olympics has the recognition and respect of many more people than a gold medal winner at a local county fair. The social value is based on the prestige of the contest and the authority of the issuing organization. In addition to often being a symbol of winning a competition,

medals can commemorate special events, inaugurations, exhibitions, even weddings of private citizens. Many of the most interesting medals are political and are especially useful in analysis of the places where they were recovered.

Because they can be issued by any organization or individual, there is much greater variety among medals than there is among coins. They are usually made in smaller numbers and can provide information at a localized scale. Medals are almost always noncurrency, even if they are made of precious metals; however, the human behavior associated with medals made from precious metal will be different than the behavior associated with medals made of lesser materials.

## A Brief History of Numismatics and its Relationship to Archaeology

While this book deals with the numismatic archaeology of North America, specifically Mexico, the United States, and Canada, it is necessary to include some history and features of Old World numismatics in order to provide an outline of the field. Numismatics had a long history in Europe and Asia before sustained contact between the Americas and Old World began in 1492. The organized study of numismatics in the Americas dates back only about two centuries, and American numismatics is built on a base of the much older numismatic studies of Europe and Asia.

Archaeology and numismatic studies share a common ancestry and have developed together. In exploring the development of archaeology, we find that numismatics was often a strong influence on the field of archaeology. For example, the fact that Christian Thomsen was an experienced coin collector apparently played an important role in his conception of the *three-age system* when he organized the first Danish national museum in 1816. The three-age system—Stone Age, Bronze age, and Iron Age—was a basic classification system used to place prehistoric European artifacts into chronological order and was used as the basis for museum classifications for many years Thomsen (1848 [1836]).

Conversely when the formal study of numismatic items becomes part of archaeology, the objects can be seen as more than just pretty or interesting art, or part of obsolete ancient economic systems. In recent years, coins and tokens have become the objects of material culture studies and have been investigated using other interpretive methods. As a result, these small objects can tell us many new things about the people and behaviors that produced, used, lost, and reused the coins and tokens in different ways.

The relationship between the fields of numismatics and archaeology is complex and dynamic; each field has had an effect on the other, beginning with their shared origins. To fully understand the history and current organization of each discipline, it is helpful to understand the rough outlines of their shared history. Perhaps the best place to start would be with the earliest known collectors in the Western world.

### *Ancient Forerunners of Numismatics*

The systematic collection and study of coins appears to have begun in the West by the time Alexander the Great united the Greek city-states and led the Corinthian League (336–323 BCE), some three hundred years after coins of early Greek city-states were first ***struck***. We know this because the artists who engraved the dies of later Greek coins showed a wide knowledge of earlier Greek coins whose types, designs, and other characteristics were copied for centuries after their first use. Some designs were so persistent for so long that it is clear that a great many examples of the older coins must have been known to the ***die*** engravers. No formal studies of coins have survived from ancient times, but many early writers made comments about coins that have been of considerable interest to modern students of history and archaeology.

Herodotus of Halicarnassus (ca. 484–425 BCE), writing approximately two centuries after it happened, attributes the striking of the first coin to the Lydians. The Lydians were the first to use gold and silver coins as early as 700–600 BCE. By the time Aristotle wrote the economics text *Oeconomica* about 330 BCE, so much manipulation of coins and coinage systems had taken place that Aristotle was able to present a remarkable array of examples of more or less unscrupulous ways for rulers to extract profit from the production, circulation, and renewal of the currency. In doing so he gave us a number of incidental bits of information on coins themselves, most of which can be verified by studying surviving examples of those coins.

By the middle of the third century CE, collecting coins and medals was sufficiently widespread in the Roman Empire to inspire the minting of special series of medals as separate, nonmonetary items designed for sale to collectors. Some were minted officially, and some were struck or cast by private workshops. From the subjects and designs of these medals we can draw at least some limited conclusions about the interests and ideas of those who minted them. Some showed athletes and commemorated victory at sports events. Others showed particularly respected former emperors, which was a source of confusion to later numismatists, who often thought that these medals were coins struck during an emperor's lifetime. The most numerous and widespread medals were those that we can easily recognize as religiously significant. These showed temples, altars, and scenes from mythology, reproductions of cult statues, and other symbols of Roman, Greek, and even some Eastern religions.

About the time of Constantine I (307–337 CE) Christian religious medals began to appear, and Christian symbolism became the rule on medals, and then on coins, until the Roman coinage morphed into the even more Christianizing Byzantine series. There are strong similarities between many Roman medals and coins and some Roman carved gems. The mythological scenes, in particular, are often rendered with a style and skill suggesting that the collectors of the medals considered themselves to be connoisseurs of art, particularly the art of the ancient Greeks and the first century of the Roman Empire.

We have no evidence of antiquarian collecting being at all common during the Medieval period in Europe, although there are some references to individuals with collections of old curiosities, and an occasional coin that imitated an ancient predecessor. A specific interest in coins was shown by early Italian antiquarian collectors like the poet Petrarch (1304–74), who had a renowned collection. The widespread revival of interest in ancient art and ancient coins was to wait, however, until the Renaissance.

### *Renaissance Collections and Studies*

Coins and medals were studied as examples of ancient art by Raphael, Correggio, and later artists, whose art was influenced by the arts of the ancient world. In fact, Michelangelo was

briefly imprisoned on a charge of receiving stolen ancient coins. Although apparently innocent of receiving the particular coins in question, he refused to discuss the sources of his coins, and was only freed through the intervention of powerful patrons. Many coins and medals may be seen in paintings of the later Renaissance, and some of the biggest patrons of painters and sculptors were also collectors of ancient coins and medals.

It was the medalists who truly brought ancient coins to the attention of the wealthy dilettanti of Europe. Ancient coins had received increased attention from Italian collectors of art and relics during the 1300s, and by the end of the century some artists and craftsmen had begun to produce forgeries. By the middle 1400s many of the imitations were not seriously intended as forgeries but were in the developing Renaissance style and collected as medallic art in their own right.

**Figure 1.4.** Medal of Pisanello, 1438, showing the Byzantine ruler John VIII Palaiologos. http://commons.wikimedia.org/wiki/File:John_VIII_Palaeologos.jpg.

Antonio di Puccio Pisano (ca. 1395–1455), usually known as Pisanello, began the first series of large Renaissance medals in 1438. His first effort, clearly influenced by ancient examples, was inspired by a very important Renaissance event, Byzantine Emperor John VIII Palaiologos's visit to Italy. The medal honoring this visit bore Latin inscriptions on one side and Greek wording on the other, an excellent example of the revived Italian interest in Greek art and culture. It was reproduced extensively, circulated to other European countries, and inspired other sculptors to produce similar efforts. In line with the Renaissance emphasis on individualism, many of the best medals were portraits, not merely of rulers, but of poets, painters, heroes, and even the favorite servants of patrons.

**Figure 1.5.** Roman bronze follis of Maxentius showing a hexastyle temple. Actual size is 23 mm. Photo by Johny Sysel, http://commons.wikimedia.org/wiki/File:AE_follis_of_Maxentius.jpg.

As the Renaissance rediscovered the past through literature in the adventures of Alexander and Caesar, or the poetry of Homer and Virgil, coins were used as illustrations to go with the texts. It was soon noted in Italy that some of the great buildings that had survived from antiquity were shown on coins. Several statues excavated and placed in the collections of dilettanti were discovered to be models from which the types of some ancient coins had been taken.

With the rise of printing in the 1400s the Renaissance spread quickly, not only geographically, but perhaps more importantly into economic classes whose members previously had not the means of buying a book when a book cost as much as a farm. Suddenly even specialized books were snapped up by literate small merchants, prosperous farmers, and priests. Coins were mentioned more often, and more or less accurate descriptions of their types and inscriptions accompanied the descriptions and illustrations of other antiquities. The mass production of these works helped lay the foundation for scientific study of antiquities, as the number of ancient coins that were recovered from the soil increased. For the increasing numbers of literate collectors the circulation of many copies of a book in a short period permitted readers to point out errors and add information in correspondence with the author, or in their own publications.

During this period errors in the descriptions of coins and medals in catalogues and books were legion. Writers uncritically repeated absurd stories about coins and other antiquities, and the illustrations (as in Camden's *Britannia* of 1600, see www.europeana.eu/portal/record/9200271/BibliographicResource_3000058902245.html) were idealized, fanciful, or just plain wrong. Some writers were little bothered by this, but serious antiquarians made the needed changes in successive editions, enabling students to identify with some accuracy many of the coins found every year throughout Europe, and laying the groundwork for scientific numismatics.

## *Scientific Antiquarianism*

Learned societies were founded in several countries during the late 1600s, and journals dealing with antiquarian studies soon began publication. Scientific antiquarianism, which was the leading trend by 1700, would be exemplified in 1770 by the avowed purpose of the British journal *Archaeologia* "to explode what rested upon only the vanity of the inventors and propagators" of fantasies (*Archaeologia* 1770). The goal of verifiability and accuracy was the key to the scientific approach.

It was during this period that some limited attention was finally given to the basic archaeological principle of what we might learn from the association of coins with other recovered material by applying the ***law of superposition***. An early example of the use of a coin in dating a portion of an archaeological site was Edward Lhwyd's conclusion that a chambered tomb found in Ireland in 1699 must be pre-Roman, as a Roman coin was found near the top of the barrow (Lhwyd 1770). In reports of excavations, particularly in Britain, specific reports of coins became more frequent, though we are rarely told just exactly which coin, or just exactly where it was found. Numismatic reports of specific coins acquired by collectors or placed in public collections began to include mention of ***provenience***, often including at least the name of the village where the coin was found. This information, scant and incomplete as it was, has been helpful in modern studies of coin distribution.

## *Scientific Numismatics*

Scientific numismatics arose from historical studies of coins in antiquarian collections. Instead of focusing on the singular beauty of individual coins, numismatists started to give some attention to how coins changed over time, and how people used them. Patterns of distribution and the study of why some coins were found far from where they were made and used suggested relationships to human behavior.

During the 1700s it became popular to publish inventories of collections, usually with illustrations, and these catalogues were useful to numismatists. By this time there were dozens of major collections, most of them forerunners of future museums, under the control of various rulers, lesser nobility, and prosperous merchants. Some religious orders also had collections, made up of objects willed to the church after the death of a collector. It had become fashionable to employ keepers to arrange collections in some sort of order.

In 1772 a thirty-five-year-old Jesuit, Joseph Hilarius Eckhel, was appointed keeper of the cabinet of coins at the Jesuits' College in Vienna. In 1773 the Jesuit Order College was dissolved, and Eckhel was appointed Professor of Antiquities and Numismatics at the University of Vienna, a post he held for the rest of his life. The job allowed him time to prepare the first truly scientific studies of numismatics, beginning with *Numi veteres anecdoti* in 1775, based on his studies of Italian collections. His crowning achievement was the *Doctrina numorum veterum* (1798), in which ancient coins were arranged in geographical and chronological order.

In Eckhel's work, numismatics was on the cutting edge of the fledgling science of archaeology. He used ***hoard*** analysis, artifact association, die comparisons, and careful epigraphic analysis to completely revise the dating and geographical attribution of Greek coins. Not content to keep antiquarian knowledge confined to a narrow circle of dilettanti, Eckhel also wrote a German-language illustrated textbook on coins for schoolchildren. This popular book was later translated into French and was used in French schools as well.


**Figure 1.6.** Medal honoring Joseph Hilarius Eckhel. Reproduced from *The Numismatist*, February 1906 (Frey 1906:39).

Thousands of new finds and corrections have made Eckhel's works technically obsolete today, but every catalogue of ancient coins now in use is clearly based on the organizational principles used in Eckhel's books. Eckhel's encyclopedic work also pointed out the gaps in European numismatics, and later scholars could direct their research accordingly. According to the usual classification scheme for coins that Eckhel took over and systematized, coins are first arranged in some sort of geographical order and then into chronological order, usually by reign. Within each reign, or sometimes within each geographical division, they are further separated into either types or denominations. Coin collectors quickly learn to separate coins into gold, silver, copper ***alloys***, and other base metals. This became the standard arrangement for coins collected in the European tradition. Personal examination, by the author, of each coin before its publication in books and catalogues became the usual accepted rule during the 1800s, as big catalogues were published describing the numismatic collections held by major museums.

### A Numismatist Organizes Prehistoric Artifacts

Christian Jürgensen Thomsen, son of a prosperous merchant, was born in Copenhagen in 1788. At the age of fifteen he was given a small collection of old coins by an influential older friend who suggested that he take up numismatics. Thomsen took the advice to heart, and within three years had built up a credible collection and made the acquaintance of some of the leading collectors in the capital. In 1807 Thomsen helped rescue the collection of one of Copenhagen's leading numismatists during the British bombardment of the city by taking it to the Royal Cabinet of Antiquities. In so doing, Thomsen made the acquaintance of the Royal Keeper of the Cabinet. By 1816 Thomsen had become the secretary of the Royal Commission for the Preservation of Danish Antiquities, and he undertook the organization and arrangement of the thousands of historic and prehistoric antiquities in the keeping of the commission.

Thomsen had no model on which to base his arrangement, so he put them in an order that seemed natural to him. His first separation of the artifacts was by material. He divided the collection first into stone, metal, and pottery. By 1819 the collection at the Royal Cabinet was opened to the public, with the first three rooms containing first stone, then bronze, and then iron artifacts. For many years it was believed that Thomsen's arrangement was based on the techniques learned in the shipping warehouses of his family business. This seems most unlikely. In storage or wholesale warehouses articles are divided up mainly by use, and in shipping warehouses they are mainly divided by source or destination. It seems far more reasonable to suppose that Thomsen, who never seems to have stated precisely how he arrived at his arrangement of artifacts at the museum, drew on his experience and training as a numismatist to arrange artifacts by the materials from which they were made.

There is an old numismatic tradition of associating metals with age. Although recent research has revised formerly accepted dates, and clarified that electrum (a natural alloy of gold and silver) was used before either gold or silver, it is accepted that early Greek gold coinage came before silver, and that Greek ***bronze*** coinage came into use about two centuries later. Associating with the leading numismatists of a major capital, Thomsen could not have been ignorant of this traditional order of the first use of coin metals. Having arranged the museum antiquities according to material, he began to suspect that he had thereby arranged them chronologically as well. This realization came gradually during the course of correspondence with other scholars.

Thomsen's work in the museum led to his 1836 publication, *A Guide to Scandinavian Antiquities*, in which he fully set out his three-age system (Thomsen 1848). The numismatist Thomsen was not only the first to organize prehistoric relics according to the three-age system; he also presided over the arrangement of the royal collection in Rosenborg Castle in Copenhagen.

**Figure 1.7.** Thomsen showing cabinets of artifacts at Rosenborg Castle, 1846. Drawing by Julius Magnus Petersen, the draftsmen who illustrated Thomsen's publications.

The collection there was arranged in chronological order, each room devoted to the reign of a particular monarch. This is precisely the customary way in which numismatists arrange European coins. It is from the Rosenborg Castle collections that other museums are reported to have derived the idea of chronological arrangement of historical objects.

As archaeologists moved from exclusive interest in art treasures to the realization that even more important and interesting information could be gained from ordinary, everyday, and even broken materials, the usefulness of numismatics increased for the Old World archaeologist. It is primarily from this later development of numismatics that the basic techniques and terminology of recent research are derived.

## *Coins and Archaeology in the Nineteenth and Twentieth Centuries*

In the nineteenth and twentieth centuries numismatic studies took hold in many parts of the world. Each area developed a distinctive history and approach to the field.

### Europe and Beyond

As the large national museums were put together in Europe, nationalism was becoming an important factor in political and cultural life. Country after country set up museums that were "national" in more than just name. Typically, the displayed artifacts were linked (rightly or wrongly) with the development of the nation and its rise to greatness. Prehistoric relics were included, as in Denmark, but coins were of greater political importance. They displayed portraits of early sovereigns, showed development of national symbols, and demonstrated who had the right to ***mint*** coins (***mint right***), a very powerful sign of sovereignty in medieval Europe. Certain countries (including those that the Greeks and Romans had considered the domains of Northern "barbarians") exhibited artifacts of the ancient world to show that they were the legitimate inheritors of the glory that was Greece and the grandeur that was Rome.

In 1808 French archaeologists under Napoleon excavated the Basilica Ulpia in the Forum of Trajan. The Roman Emperor Trajan ordered the production of many coins to commemorate the buildings of the basilica at the time when they were dedicated. The goal of Napoleon's excavation was the correct reconstruction, on paper, of that ancient building. Other artifacts—although many were found and recorded—were of distinctly secondary interest. The publications reporting on the excavation, beginning in 1818, use coin designs in attempts to fill in the many details of the construction and use of the basilica buildings that were not revealed in the material remains. Discussion continues to this day on the correct reconstruction chronology of the Basilica Ulpia; the most satisfactory dating of events are based on a thorough comparison and review of the various commemorative coins minted beginning in 133 CE under Trajan.

This is only one of many examples, though an early one, of how coins aid archaeological analysis. Still to come were the massive systematic excavations in which every artifact would be saved for analysis; coins would be invaluable for dating ***features***. However, as more books and reports were published, the spectacular coins still tended to be the ones chosen for illustrations. Yet the actual interpretation depended increasingly on large numbers of routine, corroded, and lackluster coins.

### The Development of Dating Techniques

The development of radiocarbon dating and later chemical and physical dating techniques makes it easy to forget just how challenging it was for early archaeologists to date a site. This is especially true for relative dating of different areas of a complex site. Careful large-scale excavations, like those by Worsaae in Denmark, and the meticulous and well-documented digs of Pitt-Rivers and Wheeler, turned up large numbers of coins in historic sites (Worsaae 1849; Bowden 1991). Wheeler's 1920 excavation of the Roman site of Segontium (in Wales) was an early example of an excavation in which 114 coins found in one large cellar were the key to dating most of the features and strata (Wheeler 1923).

The 55,492 coins that were recovered from the Byzantine site of the Athenian Agora was the largest number of coins recovered from a European site at the time they were excavated between 1931 and 1949. Initially, the recovered coins were simply used for establishing dates of strata and some features at that location. But the enormous number of coins excavated in a controlled dig presented an opportunity for dating using ***overstrikes*** and die links. It was common in ancient Greece to strike coins over older coins, a practice commonly found in later years as well. If enough examples of overstruck coins exist in an ***assemblage***, the coins can be placed in chronological order by careful examination of overstrikes. The assumption is that the overstruck design is later than the design of the underlying coin.

**Figure 1.8.** Early Islamic copper coin dating to approximately 700 CE overstruck on a coin of Arados, a Phoenician island off the coast of Syria, from 162 BCE. The triple ram on a Phoenician warship may be seen facing left on the overstruck coin.

**Figure 1.9.** Early Islamic silver dirham, 85 AH (704 CE), from Marsden 1867 (Album 1977).

Careful examination of coins can also reveal which ***reverse*** and ***obverse*** dies were used, and matching dies may allow placement of a series of coins in chronological order.

The amazingly patient work of Margaret Thompson at the Agora meant that the recovered coins were finally used to develop a chronology for Byzantine bronze coins from 969–1183 CE. Scholars had tried for more than two centuries to develop a chronology for this period, a task made especially difficult because the coins have no dates or names on them. Once established, Thompson's chronology was used for absolute and comparative dating throughout the former Byzantine Empire (Thompson 1954).

Margaret Thompson's work is an example of what is often called *classical numismatics*. The focus is on developing a chronology for this type of coin in order to identify (by matching specimens in her study) and date the recovered coins, also by matching coins in the chronology. Since the coins were found in an area that served as a market for hundreds of years, there was no concern for finding out what the coins were used for. The idea that the coins could be used for any other purposes than making small purchases was not yet a part of numismatic studies. However the fact that it was low-value, often worn or damaged coins that were the core of the study was an advance for the field of numismatics, and a step toward further tying archaeology and numismatics together.

## *The Near East and the Islamic World*

In the Near East, in the areas where the earliest empires sprang up along the Nile and the Euphrates and Tigris rivers, the first coins developed by Greece were used by pre-Islamic kingdoms. Alexander brought more efficient coining techniques into new geographic areas, so coinage developed throughout the Middle East and into India. Centuries later much of that area came under the rule of Islamic caliphs, and the change in religion was reflected in the coinage. Coins of the medieval Islamic world reflect their religious principles. Coins carried their information in the form of beautiful calligraphy rather than featuring images of people.

As European numismatists became interested in European coins as something other than masterpieces of art, they also developed greater interest in non-European coins. In the area between Greece and India during the 1800s, as European military and financial influence grew, scholars and treasure hunters (often the same person) moved in, along with official government representatives. Archaeological discoveries in the East led to the development of numismatic studies in the same area. In the nineteenth century, it was common for scholars and antiquarians to refer to anything beyond the geography of Western European countries to be Eastern or "Oriental."

The collection put together by William Marsden, an official of the East India Company, is the most influential work of that period; it ties together research and resources from European collections to new investigations of areas to the east. Inspired by the 1819 publication of a large collection of Eastern coins housed in Milan, Marsden searched every available reference to identify his own collection of Oriental (or Eastern) coins. The result was Marsden's great *Numismata orientalia illustrata* (1823, 1825, 1867) that provided European numismatists, for the first time in a single work, with a broad range of Islamic and Eastern coins, illustrated with drawings of his own coins that later went to the British Museum (Album 1977). Marsden's work helped others put their collections of Eastern coins in order, and many other works on Oriental coins would follow.

**Figure 1.10.** An Indo-Scythian silver coin of Zeionises, satrap of Azes, bearing both Greek and Buddhist religious symbols, struck about 10 BCE in Kashmir. Both Zeionises and Azes were known almost entirely from coins until the discovery of stone inscriptions in the 1990s in Afghanistan.

Coins appear to have been produced in India since shortly before Alexander's invasion, about 328 BCE. Although a few Bactrian coins had found their way to Europe earlier, it was during the middle 1800s that British scholars systematically studied the many coins found in northwest India and worked out (with many initial first errors and omissions) the lists of kings who had ruled over the area after Alexander and who initially inscribed their coins in Greek. At that time no other historical documents were known that could relate anything about these rulers or their subjects. It is still true that most of our knowledge of the Indo-Bactrians, Indo-Scythians, Indo-Parthians, and Kushans is derived from archaeological evidence provided in large part by coins. This romantic fact has attracted many scholars to numismatic studies in that part of the world. The long

history of coins in India makes numismatic archaeology quite as important in India as it is in Europe.

## *Chinese Numismatics*

In China, where coinage developed independently, a different historical development of numismatics took place than was the case in Europe. Some interest in coins and older forms of money seems to have developed about 2,150 years ago when a number of different coins were produced during the Han dynasty. We do not know, however, when the literature describing and discussing the earlier coins began to develop. ***Contemporary*** accounts of almost all later coins survive, though many of the accounts have come down to us only in the form of edited excerpts in later compilations.

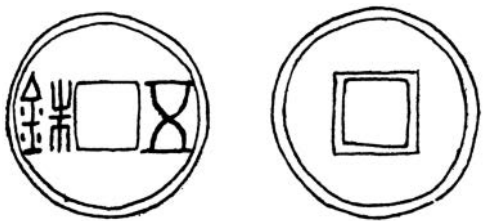

**Figure 1.11.** A drawing of an early Chinese coin, a *wu zhu* of about 115 BCE (Schjöth 1929).

The study of antiquities, and particularly of ancient writings, was a continuous tradition in China, with only a few brief interruptions. There was no rediscovery of numismatics in China because the classic tradition was never lost. In fact, the earliest Chinese round coins remained in circulation from the period when they were first minted until well after the introduction of machine-struck coins in the late nineteenth century, an amazing two millennia later. Grave robbers returned ancient coins they found buried as grave goods directly into circulation, as did farmers and laborers who uncovered hoards while working in the fields. When these recovered coins were used they joined worn coins of the same types that had circulated continuously.

Throughout the period of classical Chinese numismatics, the two millennia that concluded with the end of the Qing dynasty in 1911, coins were mainly seen by scholars as valuable aids in the study of history and especially the study of calligraphy. Neither tradition nor production techniques permitted the use of portraits on Chinese coins; instead each bears from two to eight characters of Chinese writing. In some cases, words in other languages, such as Manchu, are present. Calligraphy as an art form is very important in China, and the calligraphy of many coins was as highly regarded there as the artistry of early Roman imperial portraits had been in the West. A number of coins were known to have inscriptions carefully reproduced from calligraphy of the emperors themselves, and some of these had added ***talismanic*** value. Coins had been used as talismans in China for centuries, and numismatic works contain frequent notes on the efficacy of particular coins in dealing with particular problems, such as fire, illness, or evil spirits.

Although there are reports that earlier writers mentioned coins, the earliest confirmed work describing coins and how they were made in China was the encyclopedic *Historical Memoirs of Sima Qian*, compiled about 100 BCE, which survives in nearly complete form. The *Quan Zhi* of Hong Zua, published in 1149 CE, is believed to be the oldest full-sized book entirely devoted to numismatics. It lists the money used before the round coins: knife money, *pu* money, and some metallic imitations of ***cowries***, probably the earliest copper alloy money. The most complete book on Chinese numismatics under the Empire was the *Gu Quan Hui* of Zuoxian Li, published in 1864, which lists about six thousand coins (Li 2002).

These studies described and discussed the coins and earlier forms of money primarily as art objects, in the tradition of Chinese scholarly studies. They included many coins that never existed, reported in error by scholars over the centuries. This kind of phantom coin haunted Western numismatics too, until writers stopped reporting coins they had not personally examined. But the examination of coins remained a part of classical studies in China and most of its sphere of cultural influence until very recently.

## *In Conclusion*

While this review of numismatic history has little to do with the relatively recent coins normally found in North America, it has a lot to do with how we study them. Mistakes that have been overcome by numismatists of the past keep cropping up again today, as for example the acceptance of fanciful stories about coins and tokens, the acceptance of frauds and fantasies as real coins or tokens, and basing analysis on intuitive leaps rather than careful study. Other specifics from the history of numismatics will crop up in the following chapters and may be best understood in historical context.

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CHAPTER 2

# The Development of Money in North America

## Introduction: Why is Numismatic Archaeology Different in North America?

The field of numismatic archaeology as practiced in North America is different from its older counterparts in Europe and Asia. There are differences in theoretical approach, methods used in analysis, vocabulary, and other aspects of archaeological analysis. Also, there are many more numismatic archaeologists working in Europe and Asia than in North America.[1] The main reasons why few North American archaeologists have numismatic training are that the historic archaeological record has a relatively shallow time depth, and chronic coin shortages have kept the available material low relative to Asia and Europe. Only in the past few decades has historical archaeology emerged as a discrete discipline within American archaeology, and well-controlled excavations and collections available for study are not yet numerous.

Both the way research is conducted within archaeology programs and where those programs have been located within university structures are factors contributing to the differences in the practice of numismatic archaeology in different places. For example, European, and to some extent Asian, archaeology programs have historically been located, at least initially, in classics or classical art departments. This is a tradition that largely originated in Europe with the Renaissance fascination with ancient Greek and Roman architecture, mythology, and other aspects of those ancient worlds, as was briefly outlined in Chapter 1. In North America, archaeology matured into a discipline within the field of anthropology and has always been a subfield of anthropology. Franz Boas, the founder of American anthropology, established a lineage of anthropologists who saw archaeology as part of anthropology, a field in which archaeology is practiced as a "cultural anthropology of the past." One way this is expressed is in the placement of archaeology programs within anthropology departments across North America.

Another characteristic of North American archaeology is the central role of what is referred to as the *material culture approach*. In this view all material culture, the "stuff" of human activity, is understood as the physical manifestation of the underlying knowledge and beliefs of the people who made it. Recovered artifacts are considered first as a reflection of the beliefs and activities of people in the past. The focus is always on the people who used artifacts, what the artifacts can tell us about their culture, and where and when they were made and used, rather than giving primacy to the objects themselves. The ultimate goal of this approach is to understand the societies and culture of the people who produced and used the material culture remains. This philosophical approach to archaeological ***data*** has greatly shaped numismatic archaeology as practiced in North America.

## Historic Events Drive the Development of Numismatic Theory

Circulating currency developed and was initially used in different ways in various parts of the world. This is another major reason why numismatic archaeology developed differently on each continent. Once money in the form of coinage came into use in Europe and the Near East, beginning about 2,600 years ago, it spread rapidly throughout Europe and the Middle East. The European continent was fully monetized more than 1,500 years before coins or tokens were ever introduced to North America.

In contrast, the monetization of North American societies took place relatively recently. There were two different populations living on the continent when money was first used there, indigenous (Native American) and invasive, each one having come to the use of money in different ways. Some Native American societies used some form of money, but these societies could not be described as fully monetized. While there is evidence that a few Native American societies had a form of money at the time they first encountered people from Europe or Asia, it may never have been their main method of payment for goods or services. Moreover, Native American money that did exist has often gone unrecognized by archaeologists or historians as money or circulating currency because it wasn't made of valuable metals; it was made, for the most part, out of common sea shells.

Colonial North America was something of a currency desert from the first arrival and establishment of mainland outposts between 1513 and 1519 with explorers Ponce de Leon and Hernando Cortez's exploration of the New World for Spain until well into the nineteenth century. The number of coins imported for use or made in North America paled in comparison to the billions of coins minted in Europe and Asia. Although there were massive quantities of bullion-value coins minted in Mexico and South America, most of them were almost immediately shipped overseas as a way of extracting wealth from the colonies in the form of gold and silver. Generally speaking, colonial governments and the businesses in the colonies were not supplied with very much circulating currency by their homelands. Initially, for example, the British colonies were supplied with outdated tokens and coins that were no longer in general circulation at home (Straube 2014). This was an intentional policy designed to help insure that wealth could not accumulate in the colonies but would be shipped home in the form of trade goods.

## North American Research Directions

As a result of some of the historical developments previously outlined, North American research questions and analytical methods will differ from research conducted in places where currency has circulated for much longer periods. Using historic documentation in conjunction with archaeological evidence can be especially challenging because of the vast differences in social and political relationships among different populations. For example, the number of hoards recovered in North America will be smaller than in Europe or Asia simply because coins have been used for five times as long in the Old World. Excavated hoards provide different types of information than the recovery of individual or relatively small numbers of coins in discrete contexts, so the types of analysis that can be applied in each place will differ.

An important area of research in North America is the question of how precontact cultures interacted with newcomers, and how the arrival of European colonialists affected traditional subsistence practices. One aspect of that question is how the usually communal Native American societies changed from having barter-based subsistence economies to societies that were monetized. This is a process that is difficult to understand from historic evidence alone because much of the evidence is one sided, including documents that were produced only in the language of colonial powers. Colonial documents are rare, and significant economic evidence can be difficult to recognize. It is embedded in lists of tax collections, government regulations, and in various bookkeeping records. Often these records are found, if at all, in archives located a great distance from where the activities took place, sometimes in an entirely different country, or even on a different continent. In such cases numismatic archaeology may have much to offer, helping round out the resources available to researchers.

Historic investigations of the postcontact period reflect the presence of more than one culture and often involve circumstances in which conflicts arose between people speaking different languages. In North America there were many situations in which no one, neither the dominant society nor their neighbors, was keeping written records. The lack of written documentation from the precontact period increases the importance of archaeological evidence for understanding past economic conditions.

Old World numismatic archaeology can provide us with useful information about how the manufacture of coins developed in different places, or can help us understand, for example, the role of money in the growth of markets. North American numismatic archaeology can make special contributions as well. For example, North American numismatic archaeology will help us understand economic and social changes that took place when a Native American form of ***shell-bead money*** was adopted by colonial officials as was the case with the French, Dutch, and English use of wampum. Numismatic evidence might also provide information about the relationships among tribes that were affected by the introduction or use of money in other parts of the continent. Colonial economies were repeatedly hit with shortages of small change and numismatic archaeology helps reveal the day-to-day strategies adopted to deal with the shortages that were imposed or partially alleviated by companies operating out of the imperial homeland. Even the essential question "what is money" can be addressed with different kinds of evidence found only in North America.

**Figure 2.1.** Spanish colonial fractional coins were accepted all over North America because of the persistent shortage of coins. Courtesy of Glenn Schinke.

### *The Lack of Small Change: Problems and Solutions*

When European countries began to colonize North America, their focus was on the extraction of wealth, especially gold and silver, which were not used as money by Native Americans. Little attention was paid to the need for the colonies to have some kind of circulating currency for everyday expenses, such as small market purchases, payment for services, road and ferry tolls, or local taxes. The lack of coinage, especially small change, was a problem in most colonies regardless of which country was the motherland. Even after the new federal mints of the United States were established, they could not produce enough low-value coinage to meet the needs of the rapidly growing population, especially in whatever area was the "frontier" at the time. People used whatever coinage came their way, usually foreign coins with some intrinsic value, and adapted it to the local conditions. Where there was no coinage, settlers often imported

tokens, and later used tokens that were produced in America, and used them in place of money that would ordinarily be issued by a central government. This was the case in large areas of the United States until the end of the Civil War.

In North America, tokens must be considered and included in any analysis of the economic development of a region because tokens often made up a large percentage of the circulating currency. It is impossible to explain economic activities and developments of the period without including the use of tokens and how the use of tokens complemented or competed with other currency systems (at least until after government mints produced sufficient coinage to deal with the problem). Commodities in the form of ***commodity money*** were also a part of the economic scene in the colonies.

**Figure 2.2.** Commodity money consisting of commercial items with a standard value, such as beaver pelts, was an unpopular but necessary part of colonial economies. From Faden (1977), https://commons.wikimedia.org/wiki/File:Fur_traders_in_canada_1777.jpg.

### *Commodity Money: A Temporary Solution to the Lack of Circulating Currency*

There were periods of economic development in many parts of North America when the economy was dominated by commodity money. Commodity money is usually defined as common products, usually produced primarily for trade rather than local consumption, which are traded on the basis of an agreed upon value, in places where standard circulating currency is not readily available. Products such as tallow and hides are examples of commodities used as a standard of value in California during the Mission period, and beaver pelts were the standard in areas where French, Dutch, and British traders engaged in competitive trade with Native Americans. Commodity money was sometimes used as a solution to the lack of coinage that was felt across North America during the colonial period. As with other forms of money, the actual objects passed back and forth in trade were often paper documents promising to turn over a certain amount on a certain date: bales of cotton, standard quantities of tobacco, pelts, beads, or coins. However, since there were many problems associated with commodity money, the costs of transporting, storing, and spoilage to name only a few, this was a solution only used for short periods of time and in relatively limited areas. Although both colonial officials and the governors of the trading companies that funded the early colonies tried to regulate the value of commodities, they were unable to maintain stable prices for this substitute money due to unstable economic and social conditions and slow communications.

Prior to the establishment of clear political and economic control after the Mexican War and the subsequent Civil War, the shortage of small change forced the recognition and acceptance of many types of token money. Foreign silver and gold coins had legal tender status under US federal law until 1857, so residents were used to having a choice of what money to accept or reject in different places at different times. Coins from several countries, especially those with a known silver or gold content, circulated freely and were interchangeable. While money from different countries, especially coins with a known intrinsic value, circulated outside their country of origin all over the world, the use of foreign money was much more common in North America than it was in Europe and other places with a long history of coin use.

**Figure 2.3.** The precious metal content, rather than where it was made, determined a coin's value in the marketplace. The silver sixpence of Elizabeth I of England and the 6 sols of Louis XV of France could have been used in the same transaction as the holed half real of Fernando VI from Mexico City.

## Money Forces Social Changes

In the Old World, we see a complex development of coinage and the ways it was used. Initially, there were several forms, such as lumps of valuable metals worked into standardized pieces, produced by central authorities of the emerging city-states and used to enable markets to develop. The Old World economies that embraced coinage changed from barter systems to fully monetized, centralized markets over the course of several centuries. In some places, the change began gradually, such as among the early city-states of the Mediterranean where merchants found high-value coins helpful for the trade in bulky goods, such as wine and wheat. Coinage was adopted at lower levels of the economy at an ever-increasing rate as the usefulness of money became obvious, and the technology and resources to produce it became available. In large market places small change was a real incentive and aid to commerce.

In some parts of the Old World the adoption of money was coerced by imperial governments that needed coinage to pay armies and to extract wealth from colonies. Money can take

many forms and has many uses, and it certainly makes tax collecting easier than collecting taxes in the form of goods and services. The practice of levying taxes that had to be paid in coinage was an effective way to force a population to use money when barter had always served in the past. Introducing coinage with the likeness of a particular monarch, representing a particular political power, was a way to solidify or even attempt to change the political or cultural identity of a population.

## *Extracting Wealth from the New World*

Money had many uses, including the use of coins as an efficient tool for extracting wealth from one region and moving it to another. The removal of wealth in the form of gold and silver destined for shipment to Europe was the initial reason for trade between the colonies of Central and South America and the Old World. The wealth that was taken in the form of metals and the slave labor needed to extract it, together with the new sources of food, transformed Europe on a scale that had not been seen until that time. A very large part of the wealth that was created in North America was produced by slaves, who generally received no coins or any other form of payment. The fact that no coinage was needed for paying this large percentage of the labor force added to the overall lack of circulating currency.

When a coin was no longer legal tender because the political system that it belonged to dissolved, it could be used as bullion coinage under later regimes if its metallic content had significant value. It could be converted into new money (by ***counterstamping*** or by melting and ***recoining***) or into some other type of artifact; sometimes it was lost and became part of the archaeological record.

Many demonetized coins and tokens are incorporated into private and public collections on either side of the Atlantic once they become unusable as money. This form of coin collecting is not a recent phenomenon. People will conserve or curate pieces as mementos, good luck pieces, or sometimes even as signs and symbols of resistance to a new government; they also often pass them on to their descendants. Some of these coins and tokens were collected as artifacts early in their use-lives. Others circulated as currency for a long time before they were removed from circulation to become part of a collection. In any case, lost, discarded, or curated in a collection, coins were part of an enormous buildup located above or below ground, and it was a thicker buildup in the Old World.

Among the many social differences between the Old and New Worlds was the fact that American indigenous economies functioned without a circulating currency consisting of coins. There is still a great deal that we don't know about the material culture of the economies of the New World. There were markets that used elaborate barter systems, including some in Mexico that used highly prized commodities, such as cacao or hoe-shaped pieces of formed copper, as standard measures of value. In addition, there were vast, elaborate trade networks that could move products locally or over thousands of miles. We know that there were taxation methods that were sufficient for supporting vast empires, that there were different ways that goods could be traded, and that there were systems about which we know little or nothing. Elaborate social networks, in which wampum and other shell or stone beads were part of complex economic and political exchanges, obviously existed prior to contact; although, much of the social and historic context in which they were embedded has been lost to us, at least for now. Yet none of these complex social and economic entities had circulating coinage as a way of conducting their business. Anyone who seriously wants to study, analyze, and come to understand the meaning of recovered numismatic artifacts in North America should recognize this history, and keep it in mind.

What conclusions can be drawn from these very complex histories? There were a number of valid historic reasons why numismatic archaeology has developed differently in North America from the way it developed in Europe. Completely different histories, with one being much longer than the other, as well as different economic and social developments must be taken into consideration when archaeologists and numismatists work in each other's neighborhoods.

## *How Coins were Introduced to North America*

Coins were introduced into the often communal and barter-based North American societies through several major pathways. One was the creation of massive mines and minting operations used to extract wealth in the form of gold and silver by making it into coins. The precious metals, the labor to extract and form them into coins and ingots, not to mention the gold and silver coins that were made initially from melting down Native American jewelry and other artifacts before effective colonial mines were organized, were all part of a system of extracting wealth that eventually financed the Industrial Revolution and colonization of much of the rest of the world. Coinage was being produced, especially in Mexico, but it was primarily produced to make it easier to remove gold and silver from the area and ship it to Europe. Eventually small change that could be useful in developing local markets was produced in addition to the ingots and high-value coins destined for export. New, low-value pieces, in copper and other base metals, were often produced in the form of local tokens that were used in villages and towns that grew around the colonial centers.

Another method of introducing the use of coins to people in the New World was by importing coinage of the mother country for use in the colonies. As colonies of the southern seaboard, such as Jamestown, and more northerly settlements, such as New Amsterdam, were developed along the Eastern seaboard, they were supplied with a small amount of coinage from the mother country; sometimes the coinage consisted of tokens or coins that were no longer used at home to conduct business. However, there was never enough of this money provided to


**Figure 2.4.** British tokens from the 1600s, https://archive.org/details/englishcoinstoke00jewiiala.

**Figure 2.5.** Spanish *maravedis*, low-value copper coins like the ones shown here, circulated in Spain before they were shipped to mission sites in Florida along with other basic supplies. Their use appears to have been limited to the immediate vicinity of the missions. Photo by Dr. Ashley White.

the colonies to support all of the economic activities required of them. This resulted in many shortages and associated economic problems and numerous inventive solutions, some of which utterly failed.

Coins were also introduced and adopted through forced taxation. When huge plantations that produced the commodities of European colonial trade were established, there was a lot of resistance among the local populace. People could easily see that switching from useful subsistence crops to the colonial plantation crops like indigo, tobacco, or sugar that were exported directly or used for rum would not work to their benefit. After all, why would anyone want to stop planting food crops that could, when supplemented with hunting and gathering, successfully feed everyone, to become entangled in a community that replaced food production with colonial products, such as sugar cane, that would make someone else rich? One method used elsewhere to force local labor onto the plantations can be summarized as institutionalization of new political systems that taxed people, not as they had been paying taxes for thousands of years, with labor and products, but by demanding that taxes had to be paid using the money of the colonial powers, money that could only be obtained by working for the colonizers.

A variation of forcing people to work in order to pay taxes in coinage is to force them to buy basic necessities with plantation or factory store tokens. As colonial plantation-based economies evolved, farmers and other laborers found themselves in situations where the only work to be found was on the local plantation. People discovered that rather than receiving food or other needed goods in trade for their labor, they were paid in tokens that could only be used to buy things from the plantation store—often at prices higher than they were in the local markets. Details of this practice are described in Chapter 5 along with other ways that tokens were used to force social change in a similar manner.

What conclusions can be drawn from these very complex histories? There were a number of valid historic reasons why numismatic archaeology has developed differently in North America from the way it developed in Europe. Completely different histories, with one being much longer than the other, as well as different economic and social developments, must be taken into consideration when archaeologists and numismatists work in each other's neighborhoods.

## *Money, Before and After Contact and the Great Population Crash*

The number of people who died from introduced disease, destruction of traditional food resources, slavery under the most appalling conditions, and from the cross fire of territorial wars is difficult to enumerate; but there is no doubt that the loss destroyed most of pre-Columbian America. The terrible wave of destruction that killed the vast majority of people living in North America in the first two centuries after contact also resulted in the destruction of cultural continuity. More was lost than we can ever know. Although there was some recovery of the population in some areas, the population collapse in North America was so disruptive that even today, now that we know more about the major cultural traditions that persisted in spite of all of the destruction, we struggle to see and comprehend cultural continuities in historic and archaeological records.

Archaeology, however, can help us reconstruct part of the past, including the markets and economies of the people living here at the time of contact. We now know that there were economic exchanges using some non-European forms of money in North America before the arrival of the colonial forces. These forms, especially shell-bead money, continue to interest researchers in many disciplines, as well as the general public. It is clear that special beads, with some sort of enhanced value, had a role in the economic life of several tribes living in North America prior to, or at the time of contact. The forms that this money took and the materials that it was made from were significantly different from those used in Europe or Asia at the time of contact, although the use of cowrie shells as a form of money was known in parts of Africa and Asia. There are some researchers who argue that there was at least one system that came and went before contact. For example, Richard Yerkes (1989:113–24) made the case that a form of shell-bead money was developed and used by people of the Mississippian culture area of the American Bottom, including Cahokia, between 900 and 1400. Societies as complex as Cahokia must have had some mechanisms in place to regulate trade, or to store some form of wealth for exchange later, but if we use models based on capitalism's production and use of money as we know it, we will probably fail to discover them.

Various forms of "primitive money" have been used in many parts of the world, and many of them consisted of beads, especially shell beads, that began as specialized barter items or decorations, such as jewelry, and evolved into something more. One of the earliest anthropological studies of this subject was Malinowski's 1922 *Argonauts of the South Pacific* that followed the creation and circulation of special carved shell objects that took on properties of magic and special value in the practices of the Kula Ring. In much of the world, these forms, with their enhanced values, are treated as a special class of artifacts. Sometimes referred to as *protomoney*, they were often connected to cultures that had been marginalized or culturally swamped by larger or more recently arrived societies. These forms of protomoney, wherever they developed, can be understood as a part of the material culture of societies that

were changing, sometimes slowly and gradually, and sometimes abruptly. Studying those material remains will help us understand economic and social change.

## Native American Money

Native American forms of currency are included in this volume because they clearly functioned as money and are part of the spectrum of currencies that circulated in North America. Although shell-bead money is made from organic shells rather than inorganic metals, shell-bead money can be studied in much the same way as other forms of money. In addition, because shell beads are organic, it is possible to discover new and different things about the preproduction life of the artifacts, as we will see in the discussion of Chumash ***achum***.

There was a time when both Native American shell-bead forms and Euro-American styles of money circulated together or side-by-side. Historic documents are full of instances that describe how specialized forms of money made from shell or stone were produced at "mints" (Kroeber 1953; Bean and Blackburn 1976). The terms *money* or *circulating currency*, as defined in Chapter 1, can only be confidently applied to two shell-bead forms at this time. Although our understanding of how these shell-bead forms of money were used and circulated is limited, no treatment of numismatics in North America would be complete without their inclusion, even though we are only beginning to understand how Native Americans who produced the shell-bead money thought about it and used it.

While the French, British, and Dutch colonial forces along the east coast of North America were aware of sophisticated exchanges involving shell-bead money called wampum, and some even engaged in the production of it, their understanding of these exchange systems was limited and was profoundly influenced by their own ideas about money. Also, the colonists' attitudes about the way that trade could and should be transacted varied from one place to another and among representatives of colonial businessmen, administrators, and the tribal collectives controlling the fur trade.

### *Negative Stereotypes Associated with Beads and Shell-bead Money*

Although wampum, or *sewant* as the Dutch called it, was actually recognized by seventeenth-century colonial governments, the entire idea of beads as money has been trivialized over the centuries since then. For example, most US schoolchildren, including the authors, were taught that the island of Manhattan was purchased for "a handful of beads." Similar characterizations of this early exchange can be traced to histories of New York going as far back as 1846, and official New York State text books continued to carry the mischaracterization of that exchange until at least 1989 (Francis 2010).

Descriptions of what may have been a negotiation for access to, and use of, Manhattan Island have been used as an example of the purported lack of economic savvy on the part of the Native Americans. However, personal and permanent ownership of land was a foreign concept to the Native Americans of the area at that time, so any story about a sale or trade for land must be incorrect in its key elements. The inaccurate descriptions of that trade have contributed to the popular but mistaken idea that beads were rarely used for anything other than personal adornment, leaving the true nature of important exchanges largely unrecognized. In fact, it was likely that the presentation of beads (probably wampum) was a sign of the solemn nature and good faith of any future trade agreements between the parties, rather than a case of beads being traded for the ownership of Manhattan Island.

**Figure 2.6.** The text accompanying this fantasy illustration of the sale of Manhattan Island reads, "the glittering beads and baubles and brightly colored cloths filled the minds of the simple Indians with delight" (Wilson 1898).

The idea that special shell beads were used in rituals to make trade agreements more solemn and binding, and treaties so strong that they were considered sacred, was often misunderstood by most colonists and often misrepresented in the pages of popular history books (Francis 2010). The subtle meanings and values of Native American money were not a good fit with the ethnocentric view of Native people as "uncivilized" hunter and gatherers or novice agriculturalists who were thought to lack the understanding of sophisticated economic activity.

### *Wampum and Achum: Two Examples of Shell-bead Money*

The Native American economic activities and trade networks that incorporated shell-bead currency systems were anything but simple and unsophisticated. The two most extensive economic systems in North America incorporating Native American money were in place when Europeans first encountered the use of money in North America. The Chumash, a group of several related tribes who lived in coastal California, developed a system of shell-bead money referred to, at least in some sources, as achum (National Park Service, Channel Islands, http://www.nps.gov/chis/historyculture/nativeinhabitants.htm). On the opposite side of the continent a type of shell beads, often woven into belts and generally referred to as wampum, were used by tribes involved in the fur trade and their neighbors along the Eastern Seaboard and people in the French, Dutch, and British settlements.

Our understanding of the contact and colonial periods can be improved with the recognition of the complexity of those economies. It is possible to learn much more about aspects of Native American life and Indian-White relations if we recognize

shell beads as items with deep ritual meaning that were recognized, for a time, as a form of money used in formal economic, social, and political systems. Research into shell-bead money may include aspects of trading networks, tool technology, ritual life, craft specialization, social complexity, and even marine ecology, as well as how economic exchanges affected all of these aspects of culture.

While the two examples discussed in this chapter were the most extensive and long lasting of the currently recognized Native American economies that used standardized shell-bead money, there is no doubt that there were other forms of shell beads that were accepted at a somewhat fixed exchange rate, or what some economists refer to as *expanded value*. Other types of shell and stone beads came to have standard values on a local scale, such as the dentalium shells that were popular in the Pacific Northwest and far beyond. It can be difficult to recognize the distinction between unfamiliar forms of money and exceptional examples of more ordinary trade goods, but our ability to do so is improving. Here we make the case that these two types of shell beads clearly crossed the line from special objects of expanded value to money as we define it: achum and wampum.[2]

## *What can we Learn about the Chumash from Historic and Ethnographic Records?*

Any study of the use of Chumash shell-bead money can begin with an examination of the reports sent home by the explorers of the Gaspar de Portolá de Rovira expedition of 1769–70. These Spanish explorers described the amazing seafaring canoes used to transport massive amounts of material between coastal communities and island villages. Information sent to the King of Spain was supplemented with reports from the mission padres to their ecclesiastical offices in Spain. Both church and crown had a vested interest in learning about the local economy. Conversion and colonization efforts depended on it, and efforts to entice the Indians into the mission system depended on understanding their social, political, and economic organization.

The Chumash were one of the first tribes who were friendly to the Spanish. Initially a great many Chumash were attracted to communities near the missions where they could learn new skills and enjoy new foods. However, before long they found themselves living in appalling conditions at the missions; many were pressed into unfamiliar forms of labor and forced to live in dormitories where disease spread quickly. They had no natural immunity to European diseases, and as a result they were disproportionately impacted from exposure. In the end the Chumash population was decimated by disease. Their economy, including shell-bead money and the trade networks in which it was used, collapsed when first the Spanish and then the Mexican governments imposed their own economic system on the area without accommodation of the Chumash achum.

The Alta California missions were secularized in 1834, and the need to send records and reports to central religious authorities in either Mexico or Spain ceased. There is little documentation of what happened to people living in the immediate vicinity of the missions in the following decades; by the time linguists and ethnographers arrived to record their history, language, and material culture, there weren't many Chumash left. However, some anthropologists and linguists were able to work with a few remaining Chumash before the cultural knowledge about shell-bead production and use was lost. Anthropologists Alfred Kroeber and John Peabody Harrington conducted ethnographic and linguistic studies of the Chumash as part of their attempts to save as much as possible of the culture and languages of native Californians before the opportunity was lost. In 1925 Kroeber published *The Handbook of the Indians of California* compiling information from Harrington and other academics. Although there were few native informants who could provide information about shell beads as a form of money, some information, much of it linguistic, was recorded.

At the time Cabrillo encountered them, between 1542 and 1543, the Chumash included several linguistically distinct subgroups who lived in Southern California in the coastal areas between Malibu and Point Conception, up into the adjoining coastal ranges and on some of the Channel Islands offshore of Santa Barbara and Los Angeles. Archaeologists and anthropologists do not agree on their exact numbers, but it appears that at the time of contact with the Spanish, approximately 18,000 Chumash lived in the area. The Chumash were not a single tribe, but rather a collection of communities that shared an ancient linguistic heritage, followed religious practices referred to collectively as *'antap*, and shared an inventory of material culture (Kroeber 1953:552)

Linguistic evidence indicates that the Chumash had been living in California for thousands of years and possibly longer. Archaeological data suggests that Chumash settlements could have been in the same location for over 10,000 years. Certainly the Chumash had a sedentary and complex society able to weather fluctuations in resources and other stresses by 1300 to 1500 CE (Glassow 2004:17–25). They lived in permanent and semipermanent villages and were among the most densely populated communities of hunter and gatherers to be found anywhere in the world. Each community lived in one of eight Chumash subgroups, each occupying a specific region that supplied them with a slightly different range of resources, food, building materials, clothing, and specialized stone tool-making supplies. Although there were many Chumash living on the Channel Islands prior to the arrival of the Spanish, it appears that they all were living on the mainland by the early nineteenth century.

## *Social Stratification Leads to the Need to Concentrate and Store Wealth*

The Chumash were the most socially complex and sedentary of all the California tribes, and the subgroups were socially stratified with different ways of organizing work and distributing wealth. Archaeologists and anthropologists have been studying the specifics of that social stratification and its relationship to craft specialization in order to better understand how craft specialization develops (Arnold 1987, 2001, 2004). In the case of the Chumash, the relationship between complex social organization, production of specialized products, and a high population density apparently developed over thousands of years and produced trade networks that used a widely recognized system of money.

In order for a society to have the level of social stratification and concentration of wealth reached by the Chumash, it must have objects that indicate ownership of wealth and that allow wealth to be stored. There must be total control of the production of the items that represent wealth (in this case shell-bead money instead of coins). Such a society must also have a

method of distribution that maintains the social order, including in this case a class of elites responsible for the distribution of resources. There are ethnographic and archaeological records of societies able to live in permanent, sedentary villages, such as those of the Chumash, but they were all, unlike the Chumash, agricultural societies producing surpluses of food and other goods.

With the Chumash, as with all societies, social stratification increased as work became more specialized. Unlike other nearby indigenous people who organized work primarily according to age and gender, the Chumash had special resources and tools that required increasing specialization of labor by location, kinship, or skills that had to be kept secret from outsiders. As the social organization became more complex, the kinship groups developed more powerful leaders. Most significantly, the group that was able to produce shell-bead money developed a way to store wealth in the hands of a few by adopting specific objects to signify wealth and store it: achum. They also had methods of producing shell beads much more quickly than the people around them, and they had a way to keep the production secure.

The tool that secured control of the production of the shell-bead money was the *tomol*, a large canoe that allowed them to cross more than twenty miles of open sea to reach the Channel Islands. This unique ability to cross open seas was, in many ways, the key to the protection of the production of shell-bead money among the Chumash. The tomol was constructed of planks of wood that were sewn together with rope and sealed with pitch to make them waterproof. The Chumash used local materials, such as sharkskin, which could be used as sandpaper to smooth the plank surfaces, and red ochre and red abalone inlay were used for decoration. The tomol ranged from eight to thirty feet in length and held three to ten people. They could carry enough food and raw materials to support small groups of people dedicated to making the shell beads on the islands without fear of raids or other theft of the shell beads.

The tomol also provided a way to reach another resource that made producing shell-bead money a practical reality. An additional and essential tool was needed to produce shell-bead money quickly enough that the region's competing bead makers could not produce uniform, quality beads at anything close to the rate production of the Chumash shell-bead makers. That tool, made from a rare chert found on only one of the Channel Islands, was a special drill tip.

Recently conducted experimental archaeology demonstrated that an especially hard chert, one that could be used to make drill bits that significantly out-performed all others, occurred only on Santa Cruz Island. This island was another location that could only be reached by using a tomol, adding an extra layer to the security of the production process and helping to guarantee that unauthorized people could not make "forgeries" in their own villages (Nigra and Arnold 2013).

## *Did the Chumash Really have Money?*

We define money as having these characteristics: a medium of exchange, a store of value, a unit of account, and a means of payment. Money also has these traits: it is durable, portable, quantifiable in a system of small gradations (like a system of weights and measures), and fungible (any unit or units of a money is substitutable for any other units of equal value in the same system [Neale 1976:8]). We can look to information from archaeology and the archives of Spanish California to find evidence of these features in the Chumash shell-bead monetary systems. The Chumash word for the shell-bead money was achum, a word that is linguistically related to the name of the tribes, an indication of just how important the production and use of the shell-bead money was to their identity.

Chumash specialists made most of their shell-bead money by using various parts of two types of shell, a small univalve, Olivella, and *Tivela stultorum*, the Pismo clam. Smaller round,


**Figure 2.7.** The *tomol* could carry up to ten people across the Channel to production sites on the islands. The possession or control of the *tomol*, restricted to a few elite chiefs, limited the ownership of the resources and whatever was produced there. Illustration by Brian Garvey.

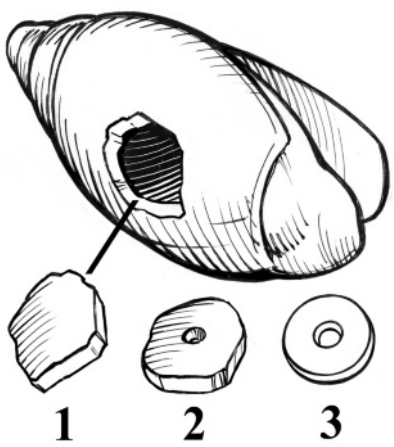


**Figure 2.8.** Olivella shell beads were made by removing a "blank" from the sidewalls of the shell. The rough blanks were drilled and then strung on cordage for finishing and polishing with fine sand. The exchange rates were determined according to a set value per length of strung beads. Illustration by Ian Akin.

flat beads were produced from the especially strong enamel-rich callus of the shells of the Olivella, using one shell to produce one bead. A section of the callus was removed from the shell and shaped into rough, round blanks that were then drilled, shaped, and polished into their final form. The size of the final bead was determined by the amount of chipping and grinding needed to reach the desired size, so the smaller the bead, the more work required to produce it. The final product was a small, unassuming little bead that could be strung on cordage and used in measured lengths for money, set into asphaltum, and applied to various objects, or woven into the surface of baskets as a form of decoration. Apparently the shell beads that were used as money were all strung on fiber cords in standard lengths.

### Production of Achum

Over long periods of time, and from one Chumash region to another, the archaeological data indicate changing preferences for different parts of the shells. The heavy Pismo clam was used to produce heavy, highly polished columnar beads that some archaeologists claim were used as money in addition to the small, circular, and flat Olivella beads (Grant 1978:516). Archaeologists are still discovering which types of shell beads were used as money in the various Chumash areas, as well as what was accepted by non-Chumash people. With uniformity being an important trait, shells used for the production of achum were probably not selected on the basis of individual beauty, but rather for availability, workability, and durability.

Although there is evidence of a shell-bead production tradition that goes back eight thousand years on the California coast, the work of teasing out the transition from a less formal barter item into a full-fledged medium of exchange has only been conducted since the 1960s. We know that the Chumash shell beads were clearly in circulation as a means of specialized bartering by 1200 CE and probably for hundreds of years before that (Arnold 2001:287–96). By the time the Spanish arrived over five hundred years later, the system was fully developed with secure locations for tool-making resources, mints for production, and mechanisms for controlling inflation. In addition to questions about exactly which types of shell beads served as true money, archaeological evidence will eventually answer questions about who was permitted access to the money and what they could have used it for. There is an extensive archaeological record going back over 1,300 years of the shell-bead money in contexts that we can now recognize as an extensive exchange network. Although it was used most intensely in the Chumash territory, Chumash shell-bead money has been recovered from sites as far away as the Colorado River and the Great Basin, in the interior valleys of Central California, and as far north as the California-Oregon border region.

Archaeologist John Goodman, who has worked on a large number of prehistoric sites throughout the Southwest, reports seeing beads made from Olivella shells "everywhere" across California and in parts of Arizona. Sometimes it appeared that people were trading with strings of finished beads; in other situations the beads appear to be reused in different ways. Goodman also reports finding unfinished bead blanks and beads in some intermediary stage of completion hundreds of miles inland from the ocean (John Goodman, personal communication, 2014). Obviously people made shell beads for a long time and in many places but their transition into a form of money took place in only a very few locations. Trying to understand why this was the case has fueled a great deal of research from different perspectives (Chase-Dunn et al. 2013).

Numismatic archaeologists are especially interested in issues such as how the distinctive shell-bead money was made, how the quality of tools and the availability of materials affected the organization of work and where people lived, and what role shell-bead money played in the development of social stratification. Much of the research and analysis needed to answer these questions, even tentatively, is still being developed and discussed, and the questions will be addressed only briefly here. Some researchers continue to question whether or not shell beads were ever really money, and if so, exactly when and why the transition took place. Such questions will remain unanswerable until the possibility that recovered shell beads might be money is considered during analysis of sites in the area. Our examination of the Chumash economic system, and the role of shell-bead money within it, demonstrates that the past was more complex, and complex in different ways, than previously thought.

### Controlled Production at a Mint

Control of the production of the monetary units by a central authority is a major criterion used to determine whether or not something is money. Archaeological evidence is clear on this issue in the case of Chumash achum, it was produced on only one island that could only be reached by tomols that were, in turn, controlled by a small elite. But some people are uncomfortable with applying the term *mint* to an island where special shell beads are made. In their point of view mints are big, strong, and secure buildings full of machinery, not secure villages on isolated islands reachable only by an enormous canoe. However, reports that were sent back to Spain routinely used the term *moneda* (mint) to describe the place where the Chumash made money, as evidenced by excerpts from reports quoted elsewhere in this chapter. The word *mint* was used because the Spanish administrators could see that the essential conditions for producing a secure money supply were being met. The tradition of calling the island village a mint was continued by E. Loeb, an ethnographer

who worked with the Pomo and Chumash in the 1920s, who frequently used the term *mint* to refer to the isolated village on San Miguel Island where the achum was produced.

### A Medium of Exchange

Ethnographic reports, beginning with the Spanish administrative reports, followed by material collected by anthropologists, include descriptions of economic exchanges that use what is, by our definition, clearly money. While collecting information on local resources for the Spanish government in 1792, José Longinos Martínez reported the following:

> All these Indians are fond of traffic and commerce. They trade frequently with those of the mountains bringing them fish and beadwork which they exchange for seeds and shawls.... When they trade for profit, beads circulate among them as if they were money, being strung on long threads, according to the greater or smaller wealth of each one.
>
> In their bargaining they use, as we use weights, their *poncos* of strings of beads. This [Tongva] word *ponco* for bead measure is used for a certain measure of strings, two turns from the wrist to the extended middle finger. The value depends on the greater or smaller extent to which the beads have been circulated, the new values depending upon their abundance ... they keep as much order as the most careful man who has accumulated some money. (King 1976:297 [italics in original])

This exchange of strings of shell beads in standard units took place around 1820.

> The Indians of Tulare country generally came over once a year in bands.... They brought over *panoche*, or a thick sugar, made from what we now call honey dew, and the sweet carisa cane, and put it into small oblong sacks made of grass and swamp flags: also pine nuts and wild tobacco pounded and mixed with lime.... These articles were exchanged for a species of money from the Indian mint of the Santa Barbara *rancherias*, called by them *ponga*. This description of money consisted of pieces of rounded shells ... which were brought by the Barbarians from the island of Santa Rosa. The worth of a *rial* [*real*] was put on a string which passed twice and a half around the hand, i.e. from the end of the middle finger to the wrist. Eight of these strings passed for the value of a silver dollar, and the Indians always preferred them to silver. (Woodward 1934:119)

This description of an exchange between inland Tubatulabal people and some Chumash includes evidence to support the contention that the standardized strings were a form of money used in a common exchange. First, there is the use of the term *mint* to describe the place where the money was made. This is followed by a description of the careful measure of a standard string as equal to the Spanish currency, the silver real, with the additional observation that the participants in the exchange preferred the shell beads to silver.

That the Chumash had established a fungible method of account is made clear by Kroeber's summary of exchanges between the Chumash and others drawn from a wide variety of sources available to him as of 1925. He includes a table in that report that describes the different exchange rates for the Chumash shell-bead money strings that clearly illustrates some of the other characteristics of money. The use of different names for different measures of string of beads indicated that the system was quantifiable in a system of small gradations, and that the currency was fungible in exchanges (Kroeber 1953:565).

There are several other interesting things included in the table, such as the names for the units of exchange and what was exchanged for what; although, the names for the beads themselves are not presented. While we know that different beads, made from different parts of the shell or from different species had different values, the complexity of the system and how it changed over time was not clear to Kroeber—indicating he was relying on the fading ethnographic record in 1925 rather than from archaeological finds.

### How Achum was Used to Pay for Services or Labor

There is a lack of differentiation between the descriptions of uses of achum by the Chumash and their tribal neighbors compared to the exchanges that took place between the Chumash and the Spanish in ethnographic descriptions. Exchanges between tribal neighbors could be viewed simply as barter, exchanges of goods for goods, except that the shell-bead money was apparently also used for services, such as paying dancers at special events like weddings, seasonal fiestas, and even at the missions. Doctors were paid when they were able to bring about a cure, and when they were not successful, those who buried the dead were paid for their labors. Fines that were paid in shell-bead money were also reported to have been levied against a family for pulling out of the agreement to help pay for a fiesta (King 1976:302–5).

It is important to add that researchers usually look at both the medium of the money in any society and the markets and trading networks where the money was used. One of the questions central to anthropology, is what causes societies to become more stratified and complex; the answer is often tied to the development of markets. The fact that money and the market are usually intertwined is demonstrated in some of the questions we cannot answer with what we already know about the Chumash. The fact that we don't yet have sufficient evidence to determine which members of any tribe (chiefs, elites, or commoners) were allowed to use the shell beads has left some questions about the how trade was conducted unanswered for the moment. However, it is possible to add the question "who got to use the money" to the roster of research questions with the expectation that the answer will tell us new things about the development of Chumash economy.

### Central Control to Prevent Inflation

There were social mechanisms for controlling inflation through regular and systematic withdrawals of money from the system. The Spanish and early ethnographers had observed the ritual deposition of beads at sacred sites and placing strings of shell beads in graves. While the ritual aspect of the disposal of beads was recognized, the Spanish observers did not recognize, or did not mention that removing beads from circulation helped control inflation. But in a fully monetized society, where all of the members were aware of the process of production and where the accumulation of wealth was an actively pursued, socially valued activity, those in control, such as the chiefs, of ceremonial activities must have recognized the need to regularly dispose of some of the locally produced money in order to keep its value from becoming inflated. There were

many situations and ceremonies that included the deposition of beads in graves or other sacred spaces. If we want to understand this class of artifacts more fully it will be necessary to expand the range of possible explanations for the contexts in which shell beads are found, including the possibility that some deposition may have been intended to limit the amount of shell-bead money in circulation.

## Twentieth-Century Research on Chumash Achum

John Peabody Harrington produced thousands of pages of notes on the various Chumash languages through his work with the few survivors he could locate, but little of this material has been published in any significant way. As a result, the Chumash are represented in fewer collections of ethnographic material, books, and museum exhibits than other complex societies and don't have as high a profile in the public's imagination as many other tribes.

In the 1920s the Department of the Interior's Bureau of American Ethnology was working to salvage what it could from the remains of the peoples and their communities after two centuries of depopulation and intentional destruction. By the 1960s anthropologists, including archaeologists, were looking at different to analyze cultures. The systems approach, with its focus on relationships and cause and effect, was inspired by and included the model of ecological systems; it brought an increased interest in the role of money in a society.

A wave of new analyses came out of the systems approach, and an understanding of human society as part of the natural world included the publication of Bean and Blackburn's 1976 *Native Californians: A Theoretical Retrospective*, a series of articles by different authors each addressing a different part of the state. In it California archaeologist Chester King pulled together a combination of historic, ethnographic, and archaeological material to support his theory that the Chumash were a totally monetized society. King (1976:289–319) suggests that the six or so Chumash tribal areas, each living in a different ecological zone, could, with freely moving currency, provide all of the Chumash with an overall variability of resources that provided a stable economic base of reserves, without engaging in agriculture. Using shell-bead money was an elegant solution to their needs to access remote resources in a more controlled fashion than barter. In addition, by monetizing the exchanges the chiefs were able to set aside funds for traditional ceremonies and fiestas and build their individual wealth.

The examination of these shell beads has been an effective way to develop information about many Chumash activities and overall social organization, making this artifact type especially useful for building a history of the entire area.

### *Using New Analytical Methods: Experimental Archaeology*

Dr. Jeanne Arnold of UCLA's Cotsen Institute of Archaeology and her students have been working with Chumash shell-bead money since the 1980s as part of Dr. Arnold's work on the connection between Chumash social organization and complex craft production. During the late 1980s and early 1990s she organized and coordinated work at thirteen different sites for the Santa Cruz Island Project. The project examined sociopolitical and economic complexity for the last 1,500 years by collecting and analyzing data about status, specialized occupations, technical changes, and subsistence change and its relationship to environmental changes. The production and uses of shell-bead money plays a key role in these studies, just as the study of any complex society will connect these topics to that community's money and overall economy.

*The Origins of a Pacific Coast Chiefdom: The Chumash of the Channel Islands* (2001) is the product of Arnold's work. In 2004, *Origins* was followed by another collection of studies, *Foundations of Chumash Complexity*. Each volume was a collection of studies, many by Arnold and many more with or by her colleagues and graduate students. A partial list of topics of articles from the two volumes below suggests some of the things we can learn as a part of the investigations of the production and use of Chumash shell-bead money. These studies were dependent on archaeological data, the context, the situation, and location of the shell beads, or the raw materials and tools used to make them.

The studies that have been coordinated at UCLA demonstrate that Olivella shells can be biochemically sourced, which allows us to determine their origins. In this way we might be able to trace the preproduction trade routes used to obtain the raw materials in the same way that chemical sourcing helps us trace the trade in obsidian.

The production of the beads required special flaked-stone tools—triangular bladeletts—which were removed from small chert microblades that were first removed from microblade cores. The bladeletts were used as drill bits, and there was a great deal of stone tool technology involved in the production of the drills themselves. By making their own drills of different chert samples and using them to drill shell samples, Arnold and colleagues used experimental archaeology to see how much difference the type of stone used for the drill tips would make in the speed of drilling holes in the beads. They tested and proved

**Table 2.1.** Research Topics Related to Shell beads Conducted at UCLA

| | |
|---|---|
| Evolution of specialized shell working | Arnold and Graesch |
| Production of flaked stone drills | Arnold, Preziosi, and Shattuck |
| Standardization and specialization: Island Chumash microdrill Industry | Preziosi |
| Ecological changes on Santa Cruz Island | Colten |
| Culture contact on the Channel Islands: historic era production and exchange systems | Graesch |
| Social evolution and political economy in the Northern Channel Islands | Arnold |
| Identifying complexity during the early prehistory of Santa Cruz Island | Glassow |
| Cultural transmission process and change in bead types on Santa Cruz Island | Pletka |
| Quarries and microblades: trends in prehistoric land and resource use on eastern Santa Cruz Island | Perry |

the theory that control of one location on Santa Cruz Island, where the best drill stone was obtained, gave the people who had access to the stone there a tremendous advantage in the production of shell beads as it was possible to drill holes faster and replace drill tips less often.

There are questions completely unrelated to social complexities that have not yet been explored. One of the most intriguing and difficult is the question of why the Spanish showed no interest in using the Chumash monetary system to their own advantage, as the Dutch and British did with wampum. Also, there are other forms of highly valued shell beads that were used by nearby tribes including not-too-distant northern tribes, such as the Pomo, that need more research. We will never really know how shell beads or other trade goods represented stored wealth, and whether or not they were some form of money, until systematic testing using a uniform set of criteria can be carried out.

## Depression Money—Pismo Clam Money: A Distantly Related Cousin?

There was a locally produced form of shell money, more closely related to tokens than anything else, produced in the community of Pismo Beach during the Depression. After President Roosevelt declared a "bank holiday" in March, 1933, there was a shortage of circulating currency in many parts of the country, including Pismo Beach right in the heart of the former Chumash territory. While many businesses and community Chambers of Commerce responded to the shortage in the traditional way, by producing local paper scrip or tokens, in Pismo Beach the local clams, once valued as a source for one type of Chumash shell-bead money, were made into ***emergency currency***. Like many other forms of tokens used to address shortages of coinage, these "clams" served as both a form of advertising and a way for people to make light of an otherwise grim reality.

Recently modern versions of the Depression clam money have appeared on the market as a novelty and form of advertising, although they may be redeemable at the businesses where they were commissioned. The reappearance of clams coincides


**Figure 2.9.** Pismo "clam money" was produced in the traditional Chumash region as a combination humorous advertisement, discount "coupon," and social commentary item during the depression. From the National History Museum of the Smithsonian Institution.


**Figure 2.10.** This recent version of Pismo "clam money" demonstrates the popularity of this kind of local promotion. By permission of coin dealer Joel Anderson.

with the selection of an example of the original form as one of "101 Objects that Made America" an exhibit at the Smithsonian's National Museum of American History in 2013. The fact that the Pismo clams were selected out of all of the objects in the Smithsonian's collection of material culture to represent American history reflects their connection to important aspects of that history.

The coin dealer who supplied the photo in Figure 2.10, Joel Anderson, reports the following concerning the new Pismo clam money: that people like the modern, locally made shell money because it is corny, it is a good tourist souvenir, and he reports that many people prefer it to the plastic souvenirs made in China. An investment firm purchased a lot of them to give out to their clients (probably made an interesting sales pitch). One was passed around Grover Beach City Hall as a joke about how to solve the city's financial difficulties. Quite a few have been sold to European collectors (Joel Anderson, personal communication, 2014).

Claiming that there is a connection between emergency money clams and the fact that Pismo clams were used to produce shell-bead money is an entertaining proposition even if it is only notional.

### *The Adoption of Clams and Wampum as American English Slang*

The word *wampum* eventually became American English slang for money, and it is used more frequently than its cousin term *clams*, which means the same thing. The terms *clams* and *wampum* have been in common use as slang terms for money since before the Great Depression. The word *wampum* has even been used and applied to Chumash money by an ethnographer who was working with the Chumash in the early part of the twentieth century (Loeb 1926:52). By the 1930s the word *wampum* became a slang term for money that was spread nationally through the new media of radio and movies. The working-class tone usually implied by the use of both *wampum* and *clams* can probably be ascribed to the fact that they were employed in less formal and small-scale exchanges. The use of the word *clams* for money was popularized in the mid-twentieth century by the comic strip B.C. Comics. Both *wampum* and *clams* can be most readily heard today on the Turner Classic Movies channel. This usage also explains, in part, why we italicize *achum*, a word in the Chumash language for a particular type

of bead, but we don't italicize the word ***wampum***. Although the word wampum started as a Native American word applied to particular beads in the seventeenth century, it became a word *in* the English language.

## Wampum—A Complex Mix of Uses and Meanings

Wampum was money; there isn't any question about that, as some might suggest with Chumash shell-bead money. In fact wampum was widely used as money in a number of different societies and cultural contexts for well over a century and has been recognized for its ritual and symbolic value for much longer than that. Wampum must be considered as a kind of money when we look at the way it was produced and used by the French, Dutch, and English colonists. However, when wampum was used solely between Native Americans, it certainly functioned as more than money. When cross-cultural exchanges including both native and nonnative people took place, the various symbolic meanings of wampum became very complicated and were often overlooked or misunderstood. For our purposes, we are going to focus on the production and use of wampum in contexts where at least one side of any exchange considered it some form of money, leaving aside how it was used prior to contact as a different topic and outside the scope of this book.

### *Why was Wampum Adopted as Money by Colonists?*

There are major differences in the way that the various types of shell-bead money were adopted and circulated in different areas. Chumash shell-bead money appears to have evolved in association with social changes entirely within native communities where it was widely recognized and used. However, it was never adopted by Spanish colonial administrators, although some Chumash and their neighbors continued to use it for some years under Spanish occupation.

Wampum developed as a continuum of shell-bead types that can be traced back to the area's Archaic period. However, different uses for wampum developed once Europeans appeared on the scene. It is unclear exactly when it happened, but around the time that the Europeans were first encountering the New World, new symbolic meanings were applied to special objects that incorporated shell beads, especially wampum. Strings of shell beads that were woven into strips on hand-held looms became essential to the diplomatic agreements with and between neighboring tribes who also adopted the use of wampum belts as part of the treaty process. Also around the same time, French traders connected with the beaver fur trade discovered that they could get permission to trade only when an exchange of wampum was included in the arrangements. Not long after the fur trade was established, wampum, in the form of strings and as loose beads, became a preferred form of payment for beaver pelts.

We don't know if the use of single strands of shell beads as a medium of exchange, as used during the fur trade, began during or after the widespread use of the wampum belts of woven beads as diplomatic instruments was established. What is clear, however, is that in contrast to the Chumash-related developments, wampum became legally recognized as money, used first by fur traders as a method of payment for pelts, and later as a local form of payment regulated by the colonial governments representing different countries. Independent French traders and the governing bodies of the Dutch and British colonies each made their own agreements for exchange rates related to payments for furs to be paid to the local tribes.

The perpetual lack of coinage in all of the colonies led to the adoption of wampum as small change that could be used for payments of debts between the colonists. Exchange rates were set by the colonial officers of the investment companies based in the motherland and were supposed to be enforced by the colonial governors. However, the contentious correspondence between Governor Stuyvesant and the directors of the West India Company illustrates that the Dutch companies in Amsterdam had a general lack of understanding of the entire situation, including the limits of Dutch control over trade and the value of any kind of money (Jordan n.d.:28–31).

There are many reasons why differences in the acceptance, use, and governance of wampum came to pass. However, the key differences center on the types of relationships that developed between local Native Americans, European trading companies, and Euro-Americans who settled in any specific region at any particular time.

### *Two Ways to Study and Understand Wampum*

Any intensive investigation into the origins and uses of wampum will reveal that there are at least two major perspectives represented in literature and discussions regarding the development and use of wampum. One view sees wampum as an item of ritual and symbolic meaning, the other view centers on its use as a form of money. If a researcher begins investigating wampum by reading literature produced or informed by Native Americans, the origins, uses, and especially the symbolic meanings become the primary focus of the descriptions. The central role of wampum as a tool for completing ceremonies and rituals is described as long and consistent, with its roots in the creation story mythology. Ethnographic and archaeological evidence is central to such analysis. Researchers who share this perspective may see the crossover from sacred objects into money as triggered by the appearance of Europeans (Ceci 1989:63–64). In contrast, when wampum is described by economists and numismatists, especially in terms of its role in European colonial trade, the focus turns to issues such as wampum's role in the economy, exchange values, and how and why it changed over time. Formal monetization as reflected in legislation is included in this approach, as well as other issues where historic documents play a central role as evidence, and become the subject of analysis.

It isn't clear, at this time, how these academic "divisions of labor" shape the view of Native American money in North America, but it is clear that the development of the different perspectives can affect findings and determine what gets published. Trying to reconcile all of the different perspectives and lines of evidence applied to the analysis of different forms of shell-bead money into a single analysis has not yielded satisfactory results. Perhaps it is not yet time to try, but rather to discover the various cultural meanings of wampum and the various contexts in which it was used.

## Description of the Forms of Wampum

*Wampum* is a term that is applied to several forms of shell beads that were produced in a large area of upstate New York and along the Eastern seaboard. It is derived from the Narragansett word *wampumpeag*. The term is applied to the individual beads, single strands, and a number of ritual objects composed of shell beads, such as belts, and symbolic objects incorporating particular shell beads.

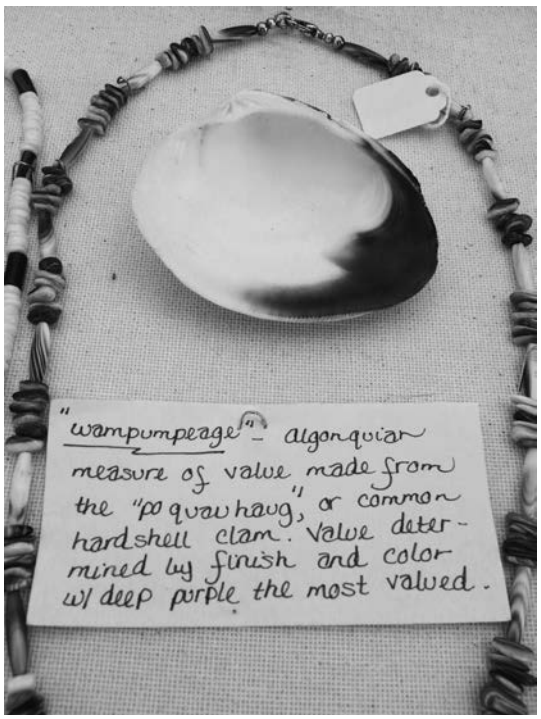


**Figure 2.11.** The symbolic importance of wampum, and objects made with it, are explained to visitors attending Sherman Indian High School's graduation Pow Wow in 2013. Photographed by permission of the anonymous owner.

Archaeological evidence of the production of shell beads and other ornaments of shell can be found dating back to the region's Archaic Period and early forms of the beads have been recovered from both Iroquois and Algonquin traditional homelands. When the Dutch traders encountered wampum in the early seventeenth century, they used the word *seawant* to describe individual beads; the word had various spellings: as *zeewant*, *seawant*, *seewan*, and *sewan*, all found in the records.

Wampum beads come in two main types. There are white beads that are cut from the central column of two species of whelk (*Busycon canaliculatum* and *B. carica*) commonly found in coastal New York and dark purple beads cut from a hard-shell clam (*Mercenaria mercenaria*) that is widely distributed along the Atlantic coast. All three types of shell were fashioned into tubular beads, about 5.5 mm long with an average diameter of about 4 mm.

The purple clamshell beads were generally held in higher esteem because the material is harder to work. The beads are finely finished, well matched, and require a great deal of labor to produce, especially when the work was done without the advantage of metal tools and lathes.

Early wampum, which was produced by people who had been working with shell material for centuries and who intended to use it for ritual purposes, was a finely finished and beautiful product. Beads that were used for woven belts had to match exactly in size and finish in order to produce intricate designs in the belts produced on looms. The finished beads were strung or woven together with sinew or deerskin.

**Figure 2.12.** Both types of seashells used to produce wampum are illustrated together with examples of finished beads. National Indian Museum of the Smithsonian Institution.

**Figure 2.13.** Image of a wampum belt produced on a hand loom. National Indian Museum of the Smithsonian Institution.

During the 1650s, a period when the Dutch West India Company was acquiring over 10,000 beaver and other pelts annually, the demand for wampum increased dramatically. The higher demand was met, in part by the introduction of some metal tools into the production process to increase the number of beads that could be produced, but eventually the overall quality declined. Since many of the beads were no longer woven into belts, as they were when they were used in sacred objects, exact uniformity was not as much an issue.

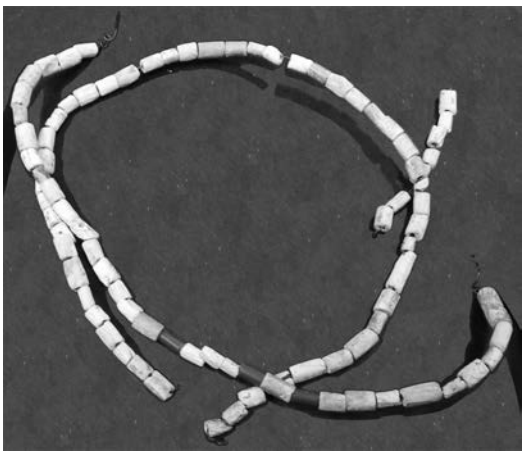

**Figure 2.14.** This string of wampum demonstrates that sometimes when wampum was used in strings for payment (fathoms), uniformity was not the same consideration as it had been when it was wampum woven into belts. National Numismatic Collection, Smithsonian Institution.

Also, by that time different colonial populations were producing their own wampum and colonists did not have the same experience with the materials as their Native American predecessors. Some especially beautiful pieces were always produced by Native Americans, especially for presentation pieces, throughout the centuries, and very small amounts of wampum are still being produced today.

## *The Use of Wampum to Sanctify Agreements*

The details concerning the origins and earliest uses of wampum may be lost in the mists of time and mythology, but its connection to the sacred world has always been unambiguous. The origins of wampum and its role in the religious, social, and political life of the first peoples of the Eastern Seaboard and some inland areas are complex. The origin stories of the Haudenosaunee (Iroquois) people, as reported by early anthropologist Louis Henry Morgan in the nineteenth century, are typical of those told to other ethnographers at the time. Although there are several variations, one often repeated origin story is that the culture hero Deganiwidah (Hiawatha) gathered together spiral shells from an inland lake and strung them together to make the original wampum to console himself upon the loss of his family (Morgan [1851] 1972). Certainly the concept of weaving things together runs deep in the origin stories, and it is easy to see how woven strings of shell beads might come to symbolize agreements "woven" between different peoples. The exchange of a woven belt, also often referred to simply as wampum, symbolized the tie between contemporary relationships and the ancient and divine past. It seems certain that there was a similarity or connection between the rituals used during trade negotiations with white people and the ceremonies and rituals of the protocontact Iroquois Federation, but the precise details are unclear (Ceci 1989:63).

Around the time that Europeans were arriving in the area, belts or sashes of wampum were used by the Iroquois in an annual ceremony at Onondaga known as the Condolence Ceremony that helped keep the bonds of the League of the Iroquois strong. The Condolence Ceremony was an Iroquois tradition that outlined the steps of negotiations and agreements between people, and the presentation of wampum belts was an essential part of that treaty process (Jones 1988:186–87). The presentation of wampum had a place at every trade meeting, and agreements solemnized with the presentation of wampum were deemed responsible for the exceptional success of that trade (Fernow 1883). Just how much of this deeper traditional meaning was clear to the various Europeans involved in some of these exchanges is not known. However the development of the tradition of the United States honoring important chiefs upon completion of treaties with the presentation of "peace medals" on sashes would seem to indicate some recognition by government officials of a need to symbolically honor the treaty process.

The new nation of the United States needed to negotiate many treaties and agreements with their Native American neighbors. An example of one of the few treaties that are still in place, although the value of the payments has been reduced to almost nothing by the effects of inflation, is the 1794 Canandaigua Treaty. Negotiated by George Washington's representative, Postmaster General Timothy Pickering, it affirmed the rights of the Haudenosaunee, or Six Nations (the Cayuga, Mohawk, Oneida, Onondaga, Seneca, and Tuscarora) to their lands and established "firm peace and friendship" between them and the United States. That agreement was sealed by the presentation of a magnificent wampum "belt."


**Figure 2.15.** United States peace medals, such as this one, presented to Chief Red Jacket, were a sign of participation in treaty negotiations. Did the recipients view this object as a functional equivalent to a wampum belt? Image courtesy of the Library of Congress.

Wampum also demonstrated a person's credentials and certified their authority to participate in treaty meetings or to speak as a representative of a group under other circumstances. Today, wampum still brings forces of the sacred past to events just as it did hundreds of years ago and must be used in the most solemn of meetings of many Northeastern tribes. Wampum, sometimes in a belt, sometimes affixed to another item, is used to indicate who has the right to attend, represent others, and speak at convocations. Wampum was used by Northeastern tribes the way that the more familiar calumet peace pipe was used by peoples along the upper Mississippi.

## *The Use of Wampum as a Form of Money*

The decimation of the European beavers and other small fur-bearing mammals was triggered by the improvement of hunting tools and traps. This development drove Europeans to seek sources of furs from beyond their homelands. Henry Hudson was seeking new sources of fur pelts when he sailed into the Hudson River Valley and established the settlement of New Netherlands for the Dutch in 1609. It wasn't long before the Dutch discovered that French fishermen in the area were already trading with the local population for furs in addition to fishing for cod. Although the Dutch were aware that quick and very profitable trading arrangements could be made in the fur trade the problem of how to pay for trade goods came up almost immediately as it was known that the local Native Americans did not value gold or silver.

The different attitudes about what was valued as money, differences that existed even several decades after trade had been established, were dramatically described in 1644 by Reverend Johannes Megapolensis. Following a visit to Ft. Orange, an outpost that served the center of the fur trade in the Albany area, Megapolensis reported deep differences in values:

> Their money consists of certain little bones, made of shells or cockles, which are found on the sea-beach; a hole is drilled through the middle of the little bones, and these they string upon thread, or they make of them belts as broad as a hand or broader, and hang them on their necks, or around their bodies. They have also several holes in their ears, and there they likewise hang some. They value these little bones as highly as Christians do gold, silver and pearls; but they do not like our money, and esteem it no better than iron. I once showed one of their chiefs a rix-dollar; he asked how much it was worth among the Christians; and when I told him he laughed exceedingly at us, saying we were fools to value a piece of iron so highly; and if he had such money, he would throw it in the river. (Jameson 1909 in Jordan n.d.)

By the time the Dutch arrived with enough people to establish Fort Orange in order to "protect their share" of the fur trade, they found that the French fur traders had already established agreements that set prices for beaver pelts in wampum, and only in wampum. By the mid-1600s the fur trade had fully incorporated wampum into all transactions.

While prices for the pelts were negotiated on an annual basis, it was clear from the outset that wampum was to be the medium of exchange. There were obvious trade advantages to the tribal representatives involved in the fur trade, especially before other sources for wampum were developed. Silver coins, even if they had been available, were just not acceptable to any of the tribes and wampum remained the medium of exchange for the fur trade until it collapsed in that part of North America.

While more research is needed on the subject, it seems unlikely that the Dutch traders understood the complex ideological meanings and sacred nature of the presence of wampum at trade negotiations. Valuable beads, but beads without any symbolic meaning known to the Dutch, were part of the commercial exchanges in other Dutch colonial enterprises. Beads made of glass, shell, ceramics, and a host of other materials had previously been part of the Dutch inventory of trade goods in Africa and the Far East. Evidence of the extensive use of shell beads in commercial trade was found during the excavations of several sites in Amsterdam including a seventeenth-century East India Company warehouse where tons of cowrie shells were recovered. It was clear from that evidence that by the mid-1600s the Dutch East India Company had accumulated cowrie shells from the Maldives Islands in order to use them in Africa as part of the slave trade (Peña 2001:159). The concept of shell beads as a standardized medium of trade was certainly known to the Dutch, even if the underlying ideological meanings of trade conducted with wampum, or finalized with the presentation of wampum, in North America was not.

## Wampum Fills an Economic Need

Wampum, by the piece and by the string of beads, joined the other forms of substitute money used throughout North American colonies due to the unrelenting lack of small change in the region even after the fur trade collapsed. Without access to the more familiar forms of money, especially any coinage, people living in the region were faced with few options—they could use wampum that derived its value from the fact that it could always be traded for furs, they could use some form of commodity money, or they could barter to meet their needs. Barter obviously has very limited uses in this colonial setting where there was little variety in what anyone had to exchange. Commodity money, usually paper notes that were backed with a standard amount of a popular export item, such as tobacco or a brick of tea, had the disadvantage of requiring storage space and incurring transportation costs, was constantly being reevaluated by regulations and directives on both sides of the Atlantic. Some types of commodity money consisted of notes based on tobacco and sugar, which were compact and well accepted outside of the immediate area, but these were not produced in the northern colonies. As long as the Native Americans were willing to trade furs for wampum, and furs had a widely known value, the usefulness of wampum as a form of money was immediately apparent.

## When was Wampum Money?

There are several types of written documents that can help us answer the question "when was wampum money?" It is possible to learn about the exchange values of wampum and how they fluctuated, the degree to which it was accepted in different locations, problems related to the production of forgeries, among other interesting issues relating to the use of wampum as money in the colonies. Source material can take the form of dated documents, such as estate inventories, governmental regulations that set the exchange rates, court decisions on appropriate payments, and letters between colonial administrators and the investment companies in the homeland, among other sources. Fortunately there are a number of studies that use such original source material and provide summaries, including one by Louis Jordan at the University of Notre Dame, Department of Special Collections, that is available online (Jordan n.d.).

Equivalent documentary evidence revealing Native American perspectives on the fur trade with Europeans may not exist, especially for the first decades after contact when there were very few Native Americans who kept written records. Unfortunately archaeological evidence, which can often supplement documentary evidence, concerning the role of wampum in the Native American social and economic developments of the period may not always be recognized as such, even if recovered. Hopefully this situation is changing, and examinations of recovered beads used as wampum can be revisited.

The first shipment of furs from New Amsterdam to Amsterdam in 1626 included strings of wampum in addition to beaver and other pelts. From what we know about the use of wampum as a symbol of the sanctification of treaties, we can imagine that they were presented to the Dutch traders to convey an intention to maintain a solemn agreement concerning the very competitive trade. Those wampum belts could have been presentation pieces intended to demonstrate the establishment of diplomatic relations with the new colony, but whether or not their intended meaning was understood by the Dutch is unclear.

In 1627, Isaac de Rasiere, then secretary of New Netherland, presented the governor of the British Plymouth Plantation gifts of cloth and sugar and sold them strings of a standard-length of wampum as an encouragement to join the trade in wampum.

The British colonists immediately saw the advantage of wampum over commodities. They even attempted to gain control of the eastern portion of Long Island in order to secure a center of production, a village the British referred to as a "mint," where whelk shells were processed into wampum (Jordan n.d.:10).

Although there were wide fluctuations in the value of wampum in Dutch or British silver, there were few fluctuations in the standard set of measures, or quantities, for wampum. The standard amount used by the colonists was a fathom, which consisted of a single stand of beads roughly six feet long, with an average of about 360 beads in the Dutch colonies. The fathom measure of wampum is not the same as a nautical fathom, but may have its origin in the use of the length of string or cord to make that type of measurement. Strands of that standard length were referred to as *peag*, or some variation of that term, and colonial women who were paid to string wampum were known in New Amsterdam as *zeewan* stringers, or *sewant* stringers.

In the final decades of the Dutch occupation, when wampum was used as currency in transactions between colonists, colonial women made some beads themselves. Some were paid to string wampum into standard fathoms and were involved in counting fathoms as they were placed into boxes or bags containing a standard number of fathoms and sealed.

Many documents of the period include descriptions of "sealed" fathoms, as well as mentions of a number of fathoms being contained in a sealed box. Collecting strings of beads into boxes or bags would have been a great aid in accounting for large transactions, and would make it easier to store wampum until the annual exchanges for pelts occurred. In addition to the measure of a fathom, values could be set for individual pieces of wampum, but fathoms and "pieces" were the standard measures.

### Wampum Regulations Found in Colonial Records

Although it is not our purpose to review the economy of colonial North America, knowing something about it will increase our ability to recognize wampum as money when it is recovered from colonial contexts. If archaeologists become more familiar with who produced wampum and how wampum was used and regulated, they will be more able to recognize it and its various possible meanings when it is recovered.

From 1626, when the first wampum was included in the shipment back to the Netherlands, through the end of the century, there was a complex and growing set of regulations controlling the production and value of wampum. Between 1637 and 1641 the governments of Massachusetts and Connecticut passed various pieces of legislation making wampum an officially recognized substitute for the various forms of commodity money and made it acceptable for the payment of small purchases. Once wampum was officially sanctioned for use as money a few colonists began to make it themselves, since it was made from readily available shell and could be produced anywhere. As a result, later regulations had to be put in place to prevent imitation or ***counterfeit*** wampum from flooding the market (Jordan n.d.:8–43).

Recognizing wampum as an acceptable form of payment led to the need to control the exchange value. Relative value, either the value of one color of bead compared to another, or the value of one string or group of strings compared to another, was subject to colonial regulations and court decisions. Regulations demonstrate that white beads were worth less than darker beads, which was a real reflection of the "cost of production," as the darker ones took longer to produce because they were made from harder material.

Another type of regulation applied to the quality of the beads. As the value of the wampum increased the quality of the beads fell, especially when wampum began to be produced by whites or Native Americans living in Massachusetts, where the source material was not as good, and the bead makers were not as experienced. Massachusetts became a source of inferior beads and inflation increased, and prices rose—meaning more wampum were needed to make payments for the same thing.

There were a number of reasons for competition between the British and Dutch colonies, and concerns over the market being flooded with inferior and even fake wampum (some even made of stone or wood) resulted in the need for courts to step in. Once it became possible for unscrupulous businessmen to substitute poor quality wampum for good pieces, the courts were forced to decide such cases.

It appears that everyone who used wampum recognized that the darker pieces were more valuable than the lighter ones, but the comparative value was another aspect of an economy based in part on wampum. Some interpretations of the Massachusetts law of 1637 suggest that the darker beads had an exchange rate of two per stuiver, while the rate for the white ones was four to one stuiver (Taxay 1970:134). Another source puts the value of a fathom of the white wampum at five guilders in 1626, while a fathom of the darker beads was worth twice as much (Ceci 1982:100 in Peña 2001) There are a number of other temporary exchange values that can be extracted from court cases and legislation, such as regulations that would set the price of a ferry ride at a price of lighter wampum. But in all of them, the darker beads are worth much more than the white ones and the quality of the workmanship and uniformity of the pieces contributed to the value.

The Dutch traders and settlers used wampum for payment of pelts from the very beginning of the fur trade through the mid-eighteenth century. As the fur trade played out, the highly monetized economy of New Netherland, one of the few colonial locations supplied with a fair amount of coinage from home, turned to dairy and agricultural activities. The need for wampum for trade with Native Americans transitioned into a need for ***cash*** for transactions within the Dutch and British colonies. These expanded market uses kept the demand for wampum, and every other recognized form of money that came into the area, very strong. As a result, estate inventories (a very helpful form of documentation) of the 1650s could include circulating currency of many countries. For example, an estate inventory recorded in 1651 listed the following forms of money (Van Laer 1974:267–76; entry 87d, in Peña 2001): "shillings [British]; pieces of eight and quarter pieces of eight [Spanish]; ducatoons [French]; rix-dollars and half rix-dollars [Dutch]; silver coin and 'specie' [unknown]; 'one sack with two Indian bags containing fl.275 in wampum.'"

This list, and others like it, demonstrates that different types of money were actually being used simultaneously. The problems caused by a long-term lack of circulating currency must have been staggering, and it is no surprise that so many different types of money could be found in the listing of one estate. What is clear from both historic and archaeological evidence is that wampum was a widely recognized form of circulating currency in several colonies for several decades, although sometimes the circumstances under which it could be used it were limited.

By the time the Dutch surrendered to the British at Ft. Orange in 1664, the value of wampum in Dutch silver was greatly reduced, and the circulation of wampum in the Dutch colony became more and more limited. Records at Ft. Orange also suggest that the relative value of wampum had declined rapidly, until the British took control of the trade regulations (as Ft. Orange became Albany). As other forms of currency became more readily available for larger purchases, the use of wampum declined for large purchases, but it continued to be used as small change.

Once the British were in political control of the area the demand for wampum, especially for use in smaller transactions and for trade with Native Americans who were still demanding payment in wampum, drove the value of wampum up for some time. The wampum supply became so limited for a time that British colonial regulations were put in place prohibiting the removal of wampum "from this government" (Jordan n.d.:43). It was during this period that the culturally Dutch residents of Albany maintained an Almshouse for the poor where the residents were put to work producing wampum as a way of helping to restore them to a better moral and fiscal situation (Peña 2001).

Wampum stayed in use among the British as small change until early in the eighteenth century in New York and surrounding areas. The evidence for its use is largely documentary, such as information about the toll for ferry crossings that included prices in wampum in addition to other forms of payment until 1727 (Jordan n.d.:41).

It isn't clear exactly when wampum stopped circulating as currency, and the evidence for its use or absence that is presented is almost always (with the notable exception of Peña's work) entirely documentary evidence of one type or another. There is no doubt that archaeological examples will add to our understanding of this type of Native American money.

## Avenues for Future Research

It has been suggested by some archaeologists, historians, and numismatists, as well as by collectors and other amateurs, that many other artifacts (especially but not exclusively beads) may have served monetary purposes in various North American societies, from the archaic period to immediately after contact. Such suggestions should not be dismissed without appropriate investigation.

Much of the information summarized in the previous pages is based on historic documents. The fact that written documents present information that is uneven and does not represent the beliefs and understanding of all participants and situations has already been discussed. This may be a good place, however, to consider some of the questions that cannot be answered with documents so that we can include them in research designs for future archaeological investigations.

Assuming that it was the tribes who first participated in the fur trade who set the prices for furs in wampum, we should ask why they chose to do that. What advantages would they get from such a method of exchange, assuming that they wished to give themselves an advantage (which may or may not have been the case)? After all, as people who lived in a society that had different social values and economy, getting "the better end of the deal" may or may not have been anything that they valued. In what ways did the Native Americans who were participating in trade understand and control "value" from their side? Was their insistence on using wampum a method of getting better access and advantageous prices on the things they most wanted—tools and guns? Or was there a different cultural value to keeping the trade in wampum?

We have discussed inflationary periods and some of the reasons for them, but how could we recognize an inflationary period in the value of wampum, or any commodity or substitute money for that matter, in the archaeological record? We don't know the answer to that now, but maybe thinking about such possibilities can help us recognize them if they should be encountered. Since wampum was much more commonly used, especially in the marketplace, than all of the different forms of coinage that were used in the area for over a hundred years, understanding inflationary periods through archaeology could be better done using wampum than coins. Maybe we will never know the answers to these questions, maybe they are ultimately unknowable—but if we want to get a more complete picture of what happened in the past, thinking about them, and other questions that arise out of them, may help us frame future research more effectively.

## Notes

1. In Haselgrove and Krmnicek's 2012 survey, "The Archaeology of Money," the number of resource articles with a clear primary focus on Europe and Eurasia outnumber those with a primary focus on North America by more than 8:1.
2. It is important to remember that deciding whether or not any particular objects are money depends in large part on how money is defined and how accurately the uses are being described.

# Circulating Currency

## Sovereignty and Currency

A review of North American coins should be prefaced with a reminder that the present territory of the United States, Canada, and Mexico includes areas taken from many hundreds of indigenous groups. Much of North America was formerly under the control of colonial powers including Britain, France, Spain, Russia, Sweden, and the Netherlands. The colonial powers had their own ideas about what territory they had a right to claim, and to what that claim entitled them. From the arrival of the first explorers until 1848 there were continuous skirmishes, wars, claims, and counterclaims in much of North America. Each colony and its claims are reflected in economic relationships that are sometimes revealed by recovery of numismatic artifacts.

A very large portion of Mexico was appropriated and absorbed into the United States in three pieces. The first piece to change hands was Texas, which was declared a Republic in 1836 prior to becoming a state, followed by the areas west of Texas after the war with Mexico in 1846–48. Finally the Gadsden Purchase was made, absorbing portions of southern Arizona and New Mexico into the United States in 1854. The northern areas of the present United States that were once part of or claimed by Canada were occupied by the United States when Canada was under British sovereignty, though in fact few colonists were present at the time.

The colonial powers and the United States all occupied territory that had been under the control of indigenous peoples. The real local authorities were Native American political and religious leaders. People of European ancestry lived in small settlements that covered a very small fraction of the area, but the Euro-Americans were the people who introduced coins and coin-like tokens into circulation.

Sovereignty was not necessarily the factor determining what circulating currency was used in a particular area at any given time. For example, while the British American colonies were usually bound by colonial law to use British money, it was rarely available. By focusing on the artifacts that were actually present in a particular time and place, it is possible to understand what was really going on, no matter what appears in the law books. In most archaeological excavations that yield remains from the contact period and later, some form of money is found. Archaeologists find evidence of means of exchange used by the residents of both immigrant and native communities, and by soldiers, merchants, and those who transported them from place to place. These include shell beads and other Native American money, gold, and silver coins from around the world, copper-alloy coins and tokens imported from Europe and Asia, or later locally struck tokens and the coins of American colonies, states, and national governments.

## Patterns of Circulation

The uses to which all these types of money were put, both in circulation and when removed from circulation, are dealt with elsewhere in this book. This chapter explores circulation patterns and the changing mix of money in various regions of North America over the last five centuries. Broad outlines of how currency circulated are presented, but much research is still needed to fill in the fine details.

People often remove attractive or otherwise interesting objects from context and take them to areas where they have no uses except as curiosities, or components of collections. It is important to keep this in mind whenever unexpected coins are recovered. Hundreds of Roman copper coins have been found in American soil, but Roman copper coins most assuredly never circulated as currency anywhere in the Americas. All such coins were once part of collections, and the same is true of many other exotic coins found here and there since shortly after the first European immigration to these shores. Numismatic objects found far away from their place of origin can give rise to much speculation, and that effect is magnified because the total number of coins recovered in North America is so small. When other hypotheses seem strained or unlikely, archaeologists should be mindful that an unusual or out-of-context coin may have been part of a collection.

Wampum and other Native American currency were discussed in Chapter 2. The first coins and tokens used in what

became the United States were imported from Europe and the Spanish American empire, although wampum and other local currencies sometimes remained in circulation for decades after European rule was established in a particular area. For example, in New Amsterdam colonial authorities set up their own mints to make a form of shell-bead money that, together with Native American wampum and European forms of money, circulated in some Dutch and British communities. Imitations of wampum were even made with porcelain and glass, and some were accepted in trade.

## *Spanish Colonial and Early Mexican Coinage*

A few coins came to America with Columbus in 1492, but few if any reached the mainland of North America. Some half-million special coins for the new Spanish colonies in Santo Domingo and the Caribbean were produced and shipped from Spain's Seville mint for about twenty years after 1505. These now-rare coins were used in the Caribbean islands where they turn up from time to time, but on the North American mainland they are likely to be found only in Florida and a few spots on the Mexican Caribbean coast.

**Figure 3.1.** Coins with a face value of four maravedi coins like this one, and other denominations as well, were minted in Spain from 1505 into the 1520s for export to Hispaniola and other islands in the Caribbean. Source: Numismática Pliego.

Some earlier bronze coins from Spain have been found in small numbers in Florida, at a site associated with Hernando de Soto's expedition of 1538–42. Many more bronze maravedis minted between 1566 and 1665 were found in a single cache at the San Buenaventura Mission site in Florida, but it is not yet clear whether these coins circulated in the area, or were deposited in a cache because they were not actually in use (White 2010).

**Figure 3.2.** Still earlier Spanish coins, like these from the late 1400s and early 1500s, were brought from Spain by sailors and soldiers. These three were recovered from the site of a 1539 Florida encampment of the Hernando de Soto expedition. Photo by Dr. Ashley White.

**Figure 3.3.** A cob eight *reales* or piece of eight minted in 1652. Photograph by Meontco.

After the establishment of the Mexico City mint in 1536, vast quantities of silver and gold were made into coins before being sent to Spain, and some were retained for use in Mexico. Royal mints in more southerly Spanish colonies produced similar coins, and by the time the British colonies along the Eastern Seaboard of the present United States were founded, the "***Spanish dollar***" of eight *reales* was a standard of trade from Newfoundland to Tierra del Fuego and in ports of East Asia as well.

During the numerous wars between European colonial powers, piratical sea captains operating as agents of their governments under letters of marque did their best to divert shiploads of coins from their intended destinations, and sometimes they succeeded. *Ocho* reales in silver, or *ocho escudos* in gold, could be spent in Virginia or London, as well as in Veracruz or Cadiz. Some ships were lost in bad weather, and divers and beachcombers of various nationalities salvaged many of the cargoes when the weather cleared. Trade between British, Spanish, and French subjects in the Americas was usually in violation of imperial laws, but was common nevertheless, and often involved Spanish colonial coins (Doty 1982:31). Whether transferred on or off the books, silver and gold from the Spanish American mints was the basis of most commercial calculations in international trade in the Americas, and in internal trade within and between colonies (Patterson 2014). Silver and gold coins from many other countries, whose precise metal content was known to merchants if not to their customers, also could be spent in American ports.

Imperial powers did not set up colonies to enrich colonists or aboriginal inhabitants. All colonies were set up to funnel riches into the purses of the rulers (political and commercial, with the usual overlap) of the home countries. Any gold and silver that came to the colonies tended to end up, sooner or later, on a ship bound eastward across the Atlantic or westward across the Pacific. A seagoing merchant hauling cargo to or from Europe or Africa tried to extract his profits in gold and silver. The result was a fluctuating but constant tendency toward coin shortages, particularly in gold and silver. Copper coinage simply did not get the attention needed from the various governments, so copper coins were scarce as well.

Much trade, from top to bottom of the economic scale, was conducted by credit or barter. This could take the form of entries in account books in Europe or in the colonies, or of paper documents exchanged between merchants. Paper notes of debts and loans rarely survive deposition in the archaeological record, so what is actually found are the scarce coins and tokens rather than the commonly used informal and formal paper exchange documents. A large gold coin is much less likely

**Figure 3.4.** Cob coins from Spanish colonial mints were exported to Europe in huge numbers, and many were used in trade in the Americas from Tierra del Fuego to Newfoundland. These coins are a single real, two reales, four reales, and eight reales, often called a "piece of eight" in English. Similar cobs were also made in gold, denominated in *escudos*. Top coin courtesy Kitty Knight, middle two images courtesy Glenn Schinke, bottom photo by Meontco.

to be lost than a small silver or copper coin, and much more effort would have been put into recovering an expensive loss. So a greatly disproportionate number of smaller and cheaper coins are found at archaeological sites compared to the numbers of the various types of coins that were in circulation at the time. On the other hand, banking hoards and emergency hoards tend to include relatively large numbers of high-value coins. But they were rarely buried where archaeologists would later look, typically being recovered by farmers when a slightly deeper plow blade came into use (Casey 1986). Do not assume, when many copper coins but few silver coins and no gold coins are found, that copper coins dominated the local economy. To use a modern analogy, millions of copper and copper-coated cents are lost every year in the United States, but they represent a very tiny fraction of the dollar value of commerce.

## *Circulation in Mexico*

Shortly after the Mexico City mint opened, it became clear that it would not provide low-value coins for the small purchases of working people. Spanish authorities were focused on moving gold and silver to the seat of empire, and they had no interest at all in making life easier for Mexicans of any ancestry. This

**Figure 3.5.** These copper *tlacos* were privately produced tokens accepted in circulation in Mexico throughout the colonial period. Many hundreds of varieties are known, with some known only from eighteenth-century drawings. Illustration by Ian Akin, 2015.

was not just a common attitude but almost the only attitude of imperial rulers in regard to coins for their American colonial subjects, whether the rulers were located in London, Paris, Madrid, Lisbon, or St. Petersburg. Before the end of the 1500s, small tokens were in circulation in Mexico City and soon afterward elsewhere in Mexico, with nominal values of one-eighth to one-sixteenth of a silver *real*. It seems quite likely, judging by the often-high quality of the work, that some of the tokens were produced at the mint or by mint employees. Complaints about these unauthorized tokens were ignored or dodged by mint directors (Rulau 2000:15–16).

Most of the tokens, called *tlacos* or *clacos*, two spellings of the same Nahuatl word, were made of copper. Some were made of other base metals, even iron, and some with local circulation at specific ***haciendas*** were made of wood. By 1768, when tlacos were the subject of a very hostile detailed report to the Spanish Crown by Agustín Coronas y Paredes, many of the tokens were of fancy shapes, including crowns, pomegranates, stars, half-moons, human heads, and so on (Rulau 2000:16–17). Various tokens, often used to save employers money in paying employees, and good at the Mexican equivalent of company stores, continued to circulate in Mexico until just after 1910 (Rulau 2000:18–122). In the cities and towns, tokens were used less frequently during the ninety years after the 1820s than they had been during colonial times because state and federal government mints produced low-value copper coins after independence.

For those engaged in large-scale commerce or dealing in luxury goods, land, and other expensive merchandise, the Mexican mints provided plenty of silver and gold coins throughout the colonial period and well into republican times (though such silver and gold coin use was largely confined to cities and towns). Colonial silver and gold continued to circulate during much of the nineteenth century alongside later coins. The supply of copper coins, and changes in size and weight of their various denominations was the varying factor in Mexican circulation. During the colonial period, almost all the copper was private or semiofficial, and often used only in particular localities. During the early republican period, copper was coined by each state, and values varied between states. Only during the 1860s did the state ***issues*** dwindle and then cease, and with the

**Figure 3.6.** Spanish colonial milled coinage was rich in symbolism, with royal portraits, pillars of Hercules, globes, Latin expressions of sovereignty, crowns, lions, and royal towers. The silver denominations were the half-real, real, two reales, four reales, and eight reales (duro, peso, or piece of eight). A well-worn later portrait of eight reales is shown in contrast to the earlier one without a portrait. A similar range of gold coins was issued in escudo denominations, with only the eight escudos shown here. Eight reales and eight escudos courtesy Glenn Schinke.

adoption of decimal coinage a standard centavo was issued and accepted throughout Mexico.

During the Mexican War for Independence (1810–22) and the reign of Emperor Agustín de Iturbide (1822–23) Mexican

**Figure 3.7.** During the early years of the Mexican Republic, from 1824 through 1867, copper small change was issued by the individual states in a bewildering variety of sizes and designs. A few examples, from top left, are a Durango one-eighth real of 1824, a Sonora one-fourth real of 1832, a San Luis Potosi one-fourth real of 1859, and a Chihuahua one-fourth real of 1860.

mints issued a chaotic mix of local coins, imitations of regal coins, and token copper-alloy issues meant to be exchanged later for silver. In 1824 the Republic began minting a regular series of silver and gold coins that carefully followed the late colonial standards of 90.7 percent for silver and 87.5 percent for gold, issued by the several Mexican mints. This series continued (with interruptions by Maximilian and the French at some mints during the 1860s) until decimalization around 1870. Maximilian's coins were decimal, using the Juarez government's 1857 plan for a decimal currency before Juarez himself could put it into effect except for an issue of bronze centavos in 1863 (Banco de Mexico 2014:14).

## *Later Mexican Coins*

After the defeat of the French invasion and Emperor Maximilian in 1867, with President Juarez back in power nationwide, Mexican coins were converted to the decimal system over a period of years. Centavos were in the large format until 1900, and coins of five centavos up to the peso were of silver, using the 90.3 percent standard through the end of the nineteenth century. Gold coins from one peso to twenty pesos were minted using the 87.5 percent standard. Small copper-nickel coins with denominations of one, two, and five centavos were minted in 1882 and 1883, but then abandoned for the rest of the century, supplanted by copper and silver. While the lower-value silver coins denominated in reales were replaced with decimal coins around 1870 (in different years at different mints), the coins with denominations of one peso and ocho reales were minted at the same time, with the last date of the ocho reales being 1897. While valid domestically, the ones inscribed "ocho reales" were

**Figure 3.8.** Mexican coins of the Republic: Silver one-fourth real, half-real, 1 real, 2 reales, 4 reales, and 8 reales. Copper-nickel centavo and copper centavo; copper-nickel 5 centavos and silver 5 centavos; silver 10 centavos; and 25 centavos.

basically intended for foreign trade, going to the Far East. The Mexican authorities continued the same design used since the first issue of the Republic in 1824, as these coins were readily accepted in Asia. Any change in design would likely have resulted in their rejection in Asian markets (certain dates were restruck as late as 1949 for shipment to China).

New designs of Mexican coins were issued starting in 1905, with the country name changed from Republica Mexicana to Estados Unidos de Mexico. Only the Mexico City mint made coins, with all other mints shut down. A small centavo had been introduced in 1900, and this denomination was continued with the new inscription, while a bronze two centavos and nickel five centavos were introduced in 1905.

After the Mexican Revolution began in 1910, though coins continued to be minted at Mexico City Mint, other coins were struck in various states, cities, and villages, depending on the fortunes of the armies. Paper money became dominant in circulation for several years. Normal circulation was largely restored after 1917, although fighting continued in some areas into the early 1920s. Silver was the dominant coin material until World War II, at a standard of 72 percent. After World War II many


**Figure 3.9.** This postcard from about 1906 was printed in Germany by the only printers able at that time to produce embossed multicolor postcards with metallic inks. It was often mailed from Mexico until about 1912. It shows at the left and center the new coins of 1905, including the gold 5 pesos and 10 pesos, and at the right a late nineteenth-century peso that circulated alongside the "ocho reales," and a 25 centavos of 1883 that was left out of the new coinage system in favor of a 20 centavo coin.


**Figure 3.10.** Three of the many coins produced at local mints during the Mexican Revolution: 1 centavo of Aguascalientes from 1915, 5 centavos of Oaxaca from 1915, and 5 centavos of Chihuahua from 1914.

new coin designs were introduced as the coins were gradually debased, reaching a low point in 1957 with pesos that were only 10 percent silver. Later issues are treated at the end of this chapter in the section "Recent Mexican Coins."

## North of Mexico

### *The Spanish Dollar and its Fractions North of Mexico*

High-value coins used north of Mexico were generally Mexican, or the almost identical issues of Spanish mints from Central and South America. Such coins generally are distinguished only by the ***mintmarks*** and the initials of mint officials, but are otherwise identical in design and composition. All precious metal coins, except local coinage in certain colonies for brief periods, passed at their value in silver or gold. A British sixpence was worth slightly less, based on its silver content, than a Spanish colonial real. The *dos* reales coin, or "two bits," was worth a little more than a shilling. While the paper money of British colonies was often denominated in shillings and pence, when the notes were exchanged for coins, the coins were usually denominated in *reales*. Some Spanish colonial coins were cut in half or quarters for use as change, but this practice was more common in the Caribbean than on the continent (Doty 1982:30–31). Such coins were often missing a bit too much silver, as it could be filed away at the cut without the loss being plainly visible, and complete coins were always preferred. Some writers have exaggerated the number of coins thus cut, as the practice is interesting, and some hoards have included a high percentage of cut coins. The reason so many cut coins were put aside in caches is not because they were especially valued, but rather that they were not well accepted in many areas.

Coins were usually hard to find even in port cities in North America, and very hard to find in the continental interior. When coins above the value of about one half-real or threepence were found, they were usually Mexican. Smaller change was another matter entirely.

### *Copper in the Thirteen Colonies*

Mexican tlacos (base-metal tokens) and later Mexican copper coins did not circulate farther north. A few may be found, but so may small copper coins of several European countries. With small change always hard to find, almost any kind of small copper coin was accepted in trade. Some coin schemes that ended in Britain and in Ireland saw their demise on that side of the Atlantic with the shipment of the remaining tokens or coins to the American side of the ocean where they were introduced into circulation by merchants or officials. Any copper coin or token was still accepted at a discount during the short periods when colonial or British regal copper coins were more readily available. Another feature of coin circulation in the British Colonies that some find surprising today is that counterfeits were knowingly accepted freely, though of course at a discount from the value of the real thing. Several very respectable businessmen in the late colonial period produced large quantities of counterfeit farthings and halfpence at private mints connected with copper mines as a way to move copper into circulation without sending it to British intermediaries. This production accelerated after 1776. There was always a ready market for their products, though values of counterfeit and official coins both fluctuated.

A Table of COINS, as they now paſs in the following Places.

| | England. l. | s. | d. | Philadelphia l. | s. | d. | N. York. l. | s. | d. |
|---|---|---|---|---|---|---|---|---|---|
| Engliſh Sixpence, | 0 | 0 | 6 | 0 | 0 | 9 | 0 | 0 | 9 |
| Engliſh Crown, | 0 | 5 | 0 | 0 | 7 | 6 | 0 | 8 | 0 |
| French Crown, | 0 | 5 | 0 | 0 | 7 | 6 | 0 | 8 | 0 |
| Guinea, | 1 | 1 | 0 | 1 | 14 | 0 | 1 | 16 | 0 |
| Spaniſh Piſtole, | 0 | 16 | 0 | 1 | 7 | 0 | 1 | 9 | 0 |
| French Piſtole, | 0 | 16 | 0 | 1 | 6 | 6 | 1 | 8 | 0 |
| Moydore, | 1 | 7 | 0 | 2 | 3 | 6 | 2 | 6 | 0 |
| Johannes, | 3 | 12 | 0 | 5 | 15 | 0 | 6 | 6 | 0 |
| Half Johannes, | 1 | 16 | 0 | 2 | 17 | 6 | 3 | 3 | 0 |
| Doubloon, | 3 | 6 | 0 | 5 | 8 | 0 | 5 | 16 | 0 |
| Spaniſh Dollar, | | | | 0 | 7 | 6 | 0 | 8 | 0 |
| Piſtereen, | | | | 0 | 1 | 4 | 0 | 1 | 6 |

NB. A ſt... of Spaniſh Silver... are ſold in London, by the Ounce, ... and often varies, but ſeldom or e... ...r exceeds 5s. 5d.

A TABLE of the Value and Weight of COINS, as they now paſs in ENGLAND, NEW-YORK, CONNECTICUT, PHILADELPHIA, AND ... &c.

| | Steel. l. | s. | d. | N. York. l. | s. | d. | Leſs Weight | Connecticut. l. | s. | d. | Phila. l. | s. | d. | Quebec. l. | s. | d. | Leſs Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENGLISH Shilling, | 0 | 01 | 0 | 0 | 01 | 0 | dwt. gr. | | 01 | 4 | 0 | 01 | 6 | 0 | 01 | 4 | dwt. gr. |
| Crown, | 0 | 5 | 0 | | 8 | 9 | | | 6 | 8 | | 7 | 6 | | 6 | 8 | |
| Guinea, | 1 | 1 | 0 | 1 | 17 | | | 5 | 3 | | 1 | 8 | | 1 | 14 | 1 | 8 | 5 | 5 |
| Spaniſh Piſtereen, | | - | | | 1 | 7 | | | 1 | 2-1-2 | | 1 | 4 | | 1 | 2 | | |
| Dollars, | | - | | | 8 | | | 17 | 6 | | | 6 | | | 7 | 6 | | 17 | 12 |
| Piſtole, | 0 | 16 | 6 | 1 | 9 | | | 1 | 2 | | 1 | 7 | | 1 | 1 | | | 4 | 4 |
| Portugal Moidore, | 1 | 7 | 0 | 1 | 18 | | | 2 | 18 | | 1 | 15 | | 1 | 16 | 1 | 16 | 6 | 18 |
| * Half-Johannes, | 1 | 16 | 0 | 1 | 4 | | | 9 | 0 | | 1 | 8 | | 1 | 0 | 1 | 8 | | |
| French Xiſtpence, | | - | | | - | | | | - | | | - | | | - | | | | |
| crown, | 0 | 5 | 0 | | 8 | 6 | | | - | | | 6 | 8 | | 7 | 6 | 6 | 8 | 17 | 12 |
| Piſtole, | 0 | 16 | 0 | 1 | 8 | | | 4 | 5 | | | - | | 1 | 6 | 1 | 1 | | 4 |
| Louis D'or or Guinea, | 1 | 1 | 0 | 1 | 16 | | | 5 | 4 | | | - | | 1 | 13 | 1 | 8 | 5 | 1 |
| German caroline. | | 1 | 18 | | 1 | 8 | | | 6 | 8 | | - | | 1 | 14 | 1 | 10 | 5 | 17 |

* At a Meeting of the Chamber of Commerce, the 7th of Auguſt 1770, it was Reſolved, That the Members of that Corporation would, in future, pay and receive all HALF JOES, that weigh 9 Penny Weight, at £.3:4:0 and for every Grain they weigh more, allow three Pence per Grain; and every Grain they weigh leſs, deduct 4d. and all other Gold in like Manner.

**Figure 3.11.** Exchange rate charts from 1759 (above) and 1771 (below). The gold coins are a two-*escudos pistole* from Lima, a 1721 *moidoire* from Brazil, a 1727 *pistole* from France, and a 1727 guinea from England. Charts are from the 1759 edition of Father Abraham's Almanack by Abraham Weatherwise of Philadelphia and The New-York Pocket Almanack for the Year 1771. 1727 pistole from the National Numismatic Collection, Smithsonian Institution.

**Figure 3.12.** Many British and Irish coins saw use in the British colonies in America. Three examples from top: silver half-groat (two pence) of Elizabeth I of 1582–1600, Irish halfpenny of 1723, and British shilling of 1758.

Some coins of other European states are sometimes found in North America at sites from the colonial period. In particular, coins of the Netherlands may turn up in New York and New Jersey; coins of Sweden and other Scandinavian countries may be found in Delaware, and a few Russian coins and rather more Siberian coins turn up in Alaska. French coins are sometimes found not only in the Upper Mississippi River area near the Canadian border and in or near Louisiana but also at the sites of short-lived French settlements in Florida. But context is very important in analysis of such coins. They must be of the right dates and must be found securely within the context of the settlements of these European countries in order to be firmly associated with these early colonial ventures. In fact, as almost any coin would do in a pinch during a coin shortage, and coin shortages were the rule rather than the exception, a French, Dutch, or Swedish copper-alloy coin found in an eastern state may well have been dropped by an Irish immigrant farmer or a German immigrant merchant as late as the 1840s, even if the coin bears a date in the 1600s.

## *Coins of the British Colonies*

A small number of silver coins were struck in Britain in 1659 for use in Maryland where they circulated for a few years. A regal copper halfpenny was struck in 1773 for use in Virginia, where it joined other coins and tokens in circulation. Other pieces struck in Britain with references to the American colonies were almost all tokens that circulated in Britain rather than in America, though a very few may have come across the Atlantic together with other British tokens. Excellent illustrations of many such tokens and some medals, with the few actual colonial coins, may be found in the latest annual edition of the *Whitman Red Book*, *A Guide Book of United States Coins*, available in most coin shops, as well as in the relevant volumes of the Krause Publications Standard Catalog of World Coins. The only significant silver issues of any British American colonies were struck in New England, and their designs and stated dates shed some light on the conflicts between British law and colonial commercial necessity.

In 1652, during the English Civil War, Oliver Cromwell and the Puritans held power, and they permitted (at least by default) the minting of silver coins for use in New England. The mint was established by the General Court of Massachusetts in Boston, and the first coins were simple flat discs of silver stamped "NE" on one side and Roman numerals on the other, with III meaning threepence, VI meaning sixpence, and XII for the twelve-pence or one-shilling denomination. These coins were easily counterfeited, could be clipped to remove a little silver without it being apparent, and almost all of them ended up being remelted and made into other coins later.

The next coins, struck from 1653 to 1660, had more complex designs featuring a willow tree. Again, most of these appear to have been recoined, that is melted and made into new coins, as they are quite rare. Coins struck from 1660 through 1667 showed an oak tree, and a pine tree appeared on the coins of 1667 to 1682. The oak tree and pine tree coins are the most frequently found. The minting dates of all the tree coins are known only from surviving records, some of which used obscure phrasing to hide violations of royal law after the restoration of the British monarchy in 1660. Massachusetts authorities had no doubt that they would be severely punished if it could be proven that they had usurped the royal coinage prerogative. So


**Figure 3.13.** Some coins were struck for use in specific British colonies. From top: Willow tree shilling and pine tree shilling from Massachusetts (struck with frozen date 1652 until 1682); shilling ("XII" pence) from Maryland, 1659; and Virginia halfpenny from 1773. The Maryland and Virginia coins were struck in England and shipped to the colonies. Willow tree shilling drawing by Montroville Dickeson, 1860; pine tree shilling drawing by Benjamin Andrews, 1895; Maryland and Virginia coin drawings from *Scott Coin Catalog* of 1895.

all the coins, no matter when they were actually minted, bore the date 1652, and thus could not be used as evidence that Massachusetts was still engaged in *coining*, a capital crime. Production of the New England coins ended in 1682, with the last coins still dated 1652 after thirty years. The coins appear to have circulated, along with European and Mexican silver coins, well into the 1700s.

The tree designs were selected because they were politically neutral. Under the Commonwealth before 1660, no royal portrait could have been used, nor would the Puritan rulers of Massachusetts have wanted to use it. And after 1660, the royal portrait could not have been used because it would have revealed the fictitious nature of the 1652 date on the coins.

## *Canadian Circulation*

In Canada, the first coins used were French, but the high-value coins tended to be Spanish colonial and other silver coins from abroad. The French coins varied over time, and certain coins of specific dates and mintmarks tend to show up in the Americas, depending on when and from what mint a shipment of coins went west from France. Each of these coins can also be found in France, as most of the silver coins went back to France to pay for European merchandise. Most French coins that came to Canada were also used in Louisiana and the Caribbean French

**Figure 3.14.** Two coins used in Quebec. The thirty-deniers billon piece from 1711 was commonly used in France, but many were shipped to Quebec for use there. The copper nine deniers (or sou) from 1722 was shipped to Quebec, but only some eight thousand entered circulation, as the local people preferred the familiar playing card money. Half a million were shipped out, and most found their way to the French colonies farther south, including Louisiana, Martinique, and Guadeloupe. Photos courtesy American Heritage Minting.

colonies. An example is the thirty-denier coin of 1711 from the Lyon mint. This ***billon*** (low-percentage silver) coin was roughly equivalent to the Spanish colonial real.

The coin supply never came close to meeting the demand, and paper (or rather cardboard) notes were widely used. Playing cards were inscribed, signed by officials, and used as money in Quebec and nearby areas, including some settlements later incorporated into the United States. When copper coins, including the nine-denier, French Colonies coin of 1722, were sent from France in the mid-1720s, they were largely rejected in Quebec where another issue of card money was used instead by popular demand. The coins were sent to the Caribbean.

Quebec came under British rule in 1759. Under British rule, private tokens, like foreign copper, were generally accepted by merchants. Some companies, particularly the Hudson's Bay Company, issued tokens that circulated at much higher values than the price of the metal based on the company's willingness to accept them in exchange for merchandise. When coins of the United States became available, particularly after the War of 1812, they circulated in Canada, together with a host of unofficial and semiofficial copper tokens, mainly produced in Britain and the United States to the order of Canadian merchants. Some of these are illustrated in the material on tokens in Chapter 5.

When large cents fell out of use in the United States during the 1850s, many were hoarded by people who considered them worth more than one cent in copper. But a great many crossed over into Canada where they were in heavy circulation through the 1860s. Large cents remained the standard in Canada well into the twentieth century, and Canadians were not much interested in small cents or the two-cent copper and three-cent and five-cent copper-nickel coins the United States adopted during the 1860s. Regal coins were introduced in several provinces, including the Province of Canada (now Ontario and Quebec) in 1858 and 1859. Starting three years after Confederation in 1867, there came adequate supplies of large one-cent coins and small five-cent silver coins bearing the portrait of Queen Victoria, along with higher denominations in silver. Gold coins from the United States continued in use, which were joined by a two-dollar gold coin with the royal portrait.

Since the 1870s, while occasional coin shortages have led to the use of US coins beyond the immediate border area


**Figure 3.15.** Canadian provincial coins: Province of Canada 1 cent, 1859; Nova Scotia 1 cent, 1861; Prince Edward Island 1 cent, 1871; and Newfoundland 20 cents, 1873. (Newfoundland continued to use its own coins until union with Canada in 1947.)


**Figure 3.16.** Coins of the Canadian Confederation. Cent, 1884; five cents, 1893; 5 cents, 1919; 10 cents, 1880; 10 cents, 1904; 25 cents, 1917; 50 cents, 1918.


**Figure 3.17.** New types of coins after World War I: Small cent, 1933; nickel five-cent piece, 1922; twelve-sided five-cent coin, this example being chrome-plated steel from 1944; and silver dollar, 1935.


**Figure 3.18.** Coins of individual states under the Confederation: Connecticut cent, 1787; Massachusetts cent, 1787; and New York cent, 1787. National Numismatic Collection, Smithsonian Institution.

(and use of Canadian coins in parts of the northern United States), each country has generally supplied its own coin needs. The chief way Canadian coins changed during the century after Confederation was that new portraits were introduced for each new sovereign, though the large cent became the small cent in 1920, the five-cent silver coin was dropped in favor of a nickel five-cent piece in 1922, and all the silver coins were dropped from 92.5 percent sterling purity to a lower-value 80 percent silver alloy in 1920. The silver dollar was introduced in 1935 but never circulated heavily.

## Some Features of Circulation in the Early United States

### *Silver Coins and Copper*

Silver coins were the workhorses of commerce in the United States from 1776 through the introduction of federal paper money during the Civil War. Paper money did not circulate widely in the Western states until the twentieth century, and silver dollars continued their role in some states until after 1920. Silver coins with values up to fifty cents were used throughout the country until 1965, with brief interruptions during the Hard Times and later the Civil War. Gold was the measure of value until 1933, and it circulated heavily in Western states but had a more limited (though still considerable) role in the East. Most transactions involving amounts less than about five dollars required the use of silver coins.

At first, the Spanish dollar and its fractions were the basic coins in the independent United States. Other silver coins passed at or just below their silver value. Coins with slightly higher silver content tended to be exported, and when the products of the US mint at Philadelphia came out starting in 1794, they were often exported as well. Paper money was used during the Revolution, but everyone always preferred silver, and desperate overissuance of Continental Currency led to severe inflation of the paper currency. When possible, sellers refused Continentals, and the expression "not worth a Continental" was still in use decades after the remaining notes had been redeemed. Except at the upper reaches of the economy, among people who could use paper notes for hundreds or even thousands of dollars, commerce after the achievement of independence was conducted with gold, silver, copper (coins and tokens), private notes, and letters of account. While some families rarely saw a silver coin, silver was involved in most transactions.

The new Philadelphia mint labored through the middle and late 1790s to supply enough coins to satisfy the needs of commerce but could not meet the demand. The focus of the mint's efforts was on low-value coins that filled in missing elements of the new decimal system, and high-value coins intended to supplant foreign silver in large transactions. The new quarter-dollar, duplicating the value of the dos reales coin of Mexico, was only produced in small quantities.

The population of the United States, consisting then of roughly the eastern one-third of today's country, was counted in the 1790 census at 3,929,214 of whom 694,280 were slaves. This was certainly an undercount, though historians disagree on how much of an undercount. Most of the uncounted lived in remote areas and had little interaction with the market economy. Also somewhat undercounted was the 1800 census figure at 5,308,483 of whom 893,602 were reported as slaves.

By the end of 1800, the mint had produced 555,425 half-cents and 7,635,703 cents, a good start toward meeting the needs of the population for low-value coins. This was still under two cents per person, and except in a few cities, the old, worn, and even counterfeit copper coins remained in circulation, with a farthing passing for one half-cent and a halfpence passing for a cent.

The total production of half-dimes was 165,163, and the production of dimes was 96,706—just a start toward introducing the decimal system into the low end of the silver circulating currency. While prices may have been stated in cents and

dollars, they were actually paid in reales, and many prices were still stated in *bits*. Total production of quarter-dollars was only 6,146; really a sample to accustom officials and bankers to the intended new denomination, and the actual coin used for this denomination was the Spanish colonial dos reales.


**Figure 3.19.** Products of the new United States mint, all dated 1794: Half cent, cent, and dollar. National Numismatic Collection, Smithsonian Institution.

Considerable numbers of the half-dollar and dollar coins were minted, but most were used in foreign trade, and internal circulation needs were not met. Coinage through the end of 1800 was 327,062 half-dollars, and 1,259,458 dollars. Well after the turn of the century, Spanish colonial coins were still generally used for these denominations.

## *Gold Coins*

Production of gold coins by the end of 1800 was very limited, with a total ***face value*** of $1,144,320 being minted. The $10.00 eagle mintage was 69,474; the $5.00 half eagle 88,458; and the $2.50 quarter eagle a tiny 2,916. The denominations, at the then-current exchange rate between gold and silver, made sense in the decimal system but did not correspond to any of the Spanish colonial gold denominations then in use. Instead, they closely corresponded to the British double guinea, guinea, and half guinea widely used in international commerce.

A guinea was twenty-one shillings, and each shilling was made up of twelve pence; so the guinea was worth 252 pence. The US cent was roughly equivalent to a halfpenny, so a five-dollar coin was worth roughly 250 pence. The guinea coin contained 0.2461 troy ounce of gold and the $5.00 half eagle contained 0.2580 troy ounce of gold. The eagles and fractions contained a little more gold than the guinea-denominated British gold coins, so the US gold coins were valued above the guinea in international commerce. This doomed them as circulating currency within the United States, and they were exported just about as fast as they were coined.

The gold that actually circulated was a mix of coins from many countries, in many denominations. Gold was not used in most ordinary transactions until production increased with major gold discoveries within the United States. Gold was used, rather, in transactions between banks and between merchants, particularly those engaged in international trade. This is an additional reason, together with the likelihood that a lost gold coin would be sought until found, that few gold coins entered the archaeological record.

## *From 1800 to the Hard Times of 1832–44*

Philadelphia Mint production continued to rise after the turn of the nineteenth century, though the silver dollar was abandoned after 1803. By 1812 self-sufficiency in coinage was only achieved in three denominations: half-cent, cent, and half-dollar. Once war broke out, the coins headed into hiding, not to be seen for several years. The former mix of worn old coppers, counterfeits, and worn imported tokens served as small change, with Spanish colonial silver coins often hoarded, but spent if anything was spent.


**Figure 3.20.** United States coins after the War of 1812: half-cent, 1826; cent, 1828; half-dime, 1830; dime, 1827; quarter, 1833; half-dollar, 1827. Photograph by Jonathan Briggs.

After the war, the mint cranked up production again. Half-cents were not resumed until 1825, but cents were provided in large numbers starting in 1816, and substantial numbers of dimes and quarters were added to the half-dollars. Half-cent production resumed in 1825, and half-dimes were added in 1829. Spanish colonial coins continued in use, and the half-cent was helpful in making change when the reales could not be made to fit into a decimal transaction.

But along came the Hard Times, starting in 1832, and most coins fell out of circulation again. Paper "shinplaster" notes were issued by local and state authorities, but mainly by private banks and merchants. And the hard times tokens (reviewed with tokens in Chapter 5) came into their own. Despite the efforts of the mint, it was not until 1844 that coins would fully reenter the economy. The situation varied by state and region. In New Orleans and some other Gulf ports, for example, worn Mexican silver was in circulation during much of the Hard Times. When the newspaper *The Picayune* was founded in New Orleans in 1837, it was named for its price: one picayune, that is, a half-real coin that had a value in the United States of six and one-fourth cents.

## *After the Hard Times, up to the Civil War*

Except for a few small mintages in the early 1850s, no more half-cent coins were released into circulation. The Hard Times had seen the effective end of this coin's circulation, and it would be demonetized in 1857. However, cents were minted in large numbers; the annual record was 6.4 million in 1848, which was later broken with just shy of ten million in 1851.

There were difficulties in maintaining silver in circulation, because the high silver content of US coins made it profitable to export them. Production of gold two and one-half-dollar and five-dollar coins went up sharply during the later 1830s due to gold discoveries in Georgia and North Carolina, and gold became more common in circulation as more coins were struck during the 1840s. New federal mints were opened in Charlotte and Dahlonega in 1838 that would continue to strike gold until the Civil War began in 1861. A New Orleans mint also opened in 1838, striking some gold, but emphasizing small silver coins in its first years to replace the worn Mexican silver coins then circulating in the area. The cent was not then used in New Orleans, and no cents were minted there. Inflation was not a factor, as the money supply was always inadequate. But that would change at the end of the 1840s.

**Figure 3.21.** Five-dollar gold coin from the Dahlonega mint, 1852. National Numismatic Collection, Smithsonian Institution.

In 1848, shortly after California was conquered from Mexico, gold was discovered in the Sacramento area. By the middle of 1849, tens of thousands of gold seekers from all around the world had come to California with their picks and shovels. A few even brought minting machines to make private gold pieces. By early 1850, gold inflation was a major factor in the economy of the United States, and then of the world. The huge quantities of gold coming out of the ground in California adjusted the ratio of the gold price to the silver price, raised prices in California to unbelievable levels, and increased to some degree the gold price of just about everything, just about everywhere. At first, the Philadelphia mint insisted on bringing the gold to the mint to strike it into coins. The mintage of most gold coins shot up, and new gold coins were introduced: the gold dollar in 1849, the twenty-dollar double eagle in 1850, and the three-dollar gold piece in 1854.


**Figure 3.22.** Three-cent silver "trime" of 1855; half-dollar of 1853 with arrows at date to indicate slightly reduced silver content. The rectangular hole appears to have been made with a nail. Half-dollar used with permission of Riverside Stamp and Coin Shop.

The mintage of silver coins went up too, and three-cent silver pieces (known for a while as "trimes") were struck in large numbers starting in 1851. A downward adjustment in the silver content of the coins took place in 1853, with arrows at the dates on each coin marking the new reduced-silver versions. This was successful in reducing exports of silver coins, and the mintages set records, while the coins stayed in circulation.

The many Chinese and related coins found in archeological sites dating from 1849 through the early twentieth century are not dealt with in this chapter, as none of them circulated as money on this side of the Pacific Ocean. They are described in Chapter 4.

There were regional differences in coin circulation, as there always have been, and some of them are significant to archaeologists. For example, the large cent never circulated in the West, and even the smaller one-cent coins did not circulate in California and some neighboring states until after the Civil War. But many of the local features of circulation involved branch mints, whose coins tended to circulate in their own areas. In 1854, a new mint opened in San Francisco, and its production was considerable from the start. It was the only mint on the West Coast, and in the days before the transcontinental railroad its products tended to circulate only in the West (except for gold, that was often shipped to the East Coast after minting in San Francisco).

With silver coins actually circulating, and the mintages high enough to meet the demand, foreign silver had its legal tender status eliminated in 1857. The foreign coins would still be accepted by banks until 1859 (and that deadline was extended briefly again), but they would only be accepted for silver at a discount, with full value given only if they were exchanged for new small US cents. By 1860, foreign coins were no longer valid in the United States.

The major change that left plenty of evidence in the archaeological record was the 1857 replacement of large cents with shiny new copper-nickel small cents. The new coin was very popular, and forty-one million were distributed during the two years of production of the flying eagle cent. The Indian Head

**Figure 3.23.** The small cents of 1858 were made in two designs: Left, the Flying Eagle type of 1857–58; right, the Indian Head type of 1858 and later. National Numismatic Collection, Smithsonian Institution.

design was introduced in 1859, and by 1861, 67 million of those had been minted. War came in 1861, a Civil War that affected everyone in the country, and the cents, the silver, and the gold all dropped from circulation for a time.

During the Civil War, paper money became the norm in monetary circulation. Small paper notes were even introduced for small change, although tokens and coins were used for cents. In areas controlled by the Confederates, paper remained the only circulating medium right up until final defeat, even as the value of Confederate paper money fell off the cliff. But in the areas under Union control, the great majority of the country by late 1864, new coins were introduced to provide a full range of change despite the emergency.

Tokens were outlawed by the federal government during 1863; though replacing them was more easily said than done. A two-cent coin in copper alloy was struck in a quantity of almost twenty million in 1864. A copper-nickel, three-cent piece followed in 1865, with over 11 million struck that year. To replace the silver half-dime, a copper-nickel five-cent piece was planned, but production did not begin until 1866, after the war was over. Its 1866 mintage was over 14 million, and tens of millions more came over the next decade. The cent had been struck continuously during the coin shortage, and ninety-one million additional copper-nickel cents were added during 1862, 1863, and 1864. However, in 1864, the composition was changed to a 95 percent copper bronze alloy, reportedly in an effort to reduce hoarding, and mintage of the new bronze cent was almost 40 million in 1864 and over 35 million in 1865. In most of the country, some months after the war's end, the coin shortage was over. Neither large cents nor small cents, nor the tokens used during the Civil War, saw circulation in the West. The cent was not used in Western states until well after the Civil War was over.

**Figure 3.24.** New coins of the late 1860s: 2-cent copper, 1866; 3-cent copper-nickel coin, 1865; 5-cent copper-nickle "shield nickel," 1867.

## *After the Civil War*

During and after the Civil War, as gold production continued in California, tremendous quantities of silver came from the ground in neighboring Nevada. A mint was opened in Carson City in 1870 to convert some of this silver into coin close to the mines, and it continued to strike coins until 1893. A twenty-cent coin was introduced in 1875; most were produced in San Francisco and Carson City, but the resemblance in size, appearance, and weight to the quarter made it highly unpopular, and it was quickly abandoned. The reason for continued mintage of the silver dollar, confined to bank vaults to provide a reserve in most states, was basically the clever political footwork of the senators from certain Western states, including Nevada. In much of the West, however, the silver dollar still circulated, and

**Figure 3.25.** United States coins of the later nineteenth century: Indian Head bronze cent, 1890; seated Liberty dime, 1873; five-cent copper-nickel Liberty-head or "V nickel," 1883; seated Liberty quarter, 1876; seated Liberty half dollar, 1870; Morgan (Liberty head) dollar, 1885; gold "Indian princess head" dollar, 1862. Gold dollar from the National Numismatic Collection, Smithsonian Institution.

banknotes were much less popular than silver and gold. This situation continued right up into the 1930s when gold coins were taken out of circulation. Even then the silver dollar was the sentimental favorite in some parts of the West and a vital necessity in Nevada where it was used in gambling, the state's new basic industry after legalization in March 1931.

## The Twentieth Century

Mining in Colorado and neighboring Rocky Mountain states was the motivating factor behind the opening of the Denver mint in 1906. The smaller and less efficient New Orleans mint, much farther from the mines, closed in 1909. From this point until 1933 during the Great Depression, the coinage system was stable, though coin designs changed, and the silver dollar went in and out of production without much effect on circulation. The First World War, which completely rearranged the currency systems of many countries, had relatively minor effects on the metallic currency of the United States.


**Figure 3.26.** Five-cent buffalo "nickle," 1927; Barber dime, 1915; "Mercury" dime, 1926; standing Liberty quarter, 1924; Walking Liberty half-dollar, 1921; Peace dollar, 1925.

In 1933, in response to international effects of the worldwide Depression, gold was taken out of circulation. The half-dollar remained a workhorse of circulation, but coinage of silver dollars ceased in 1935.

During the Great Depression and the war that followed, most countries removed silver from their coinage. The United States, a big silver producer, did not. In fact, during World War II another silver denomination was added. Months after the attack on Pearl Harbor brought the United States into the war, nickel was classed as a strategic material, and the five-cent piece (while still called a *nickel* by most people) saw a change in composition; silver and manganese substituting for nickel. The alloy before and after the war was 75 percent copper and 25 percent nickel. The composition during the war became 56 percent copper, 35 percent silver, and 9 percent manganese. These 35 percent silver pieces had the mint mark moved to the top of the dome of Monticello on the reverse, and for the first time coins of this denomination struck at the Philadelphia mint had a mint mark: a large "P." With the rise in the silver price in the 1970s, the 35-percent-silver "war nickels" dropped out of circulation, as their bullion price went above five cents.

**Figure 3.27.** This "war nickel" was in use for about twenty years before being removed from circulation, and it shows considerable wear. The silver/manganese/copper composition was more susceptible to wear than copper-nickel. The large mintmark over the dome of Monticello on the reverse marks this as a wartime silver issue.

The 19-percent reduction in the copper content of the nickel reduced copper use in coinage somewhat, but for the 1943 mintage year the copper was taken out of the cent as well, allowing its diversion to the war effort. The new cent was made of steel with a coating of zinc. When buried, the steel cent quickly loses some of its zinc coating, and the steel rusts, leaving the coin pitted and corroded to a red-brown to black color. By the start of 1944, the supply of copper had improved, and cents were restored to a copper-alloy composition. Historical archaeologists working at war-era sites need not clean the 1943 steel cents to identify them—they can be picked up with a magnet, something that will not work on any other cents.

After World War II, metallic content of all the coins reverted to their prewar alloys. Only one change was made; the design of the dime was changed to honor the memory of President Franklin D. Roosevelt. In 1948 the half-dollar was redesigned to feature Benjamin Franklin and the Liberty Bell. The reverse of the cent was changed in 1959 to show the Lincoln Memorial, on the 150th anniversary of Lincoln's birth. In 1964, the half-dollar design changed again in memory of President John F. Kennedy, who had been assassinated late the previous year. A huge mintage of over 433 million was part of the final set of 90-percent-silver coins produced by the United States for circulation. The next year, silver was out of the dime and quarter and replaced by copper clad in copper-nickel. The half-dollar retained a little silver and was minted in a composition of 40 percent


**Figure 3.28.** Lincoln Memorial cent, 1961; Jefferson five-cent "nickel," 1957; Roosevelt dime, 1963; Washington quarter, 1953; Franklin half-dollar, 1960; Kennedy half-dollar, 1964. All could have been in the same change purse in 1964, before silver coins left circulation.

silver and 60 percent copper from 1965 through 1970 when the silver price rose, and the copper-nickel-clad copper composition was used beginning in 1971. While many silver coins have been struck for collectors and sold at a premium, no coins containing silver have been placed into circulation in the United States since 1970.

Of interest to an archaeologist who seeks to date recent features and strata using coins is the fact that most silver coins disappeared from circulation during the 1965–68 period, and the war nickel and the 40-percent-silver Kennedy half disappeared from circulation in 1971–72. A few stray coins remained in circulation for a few years, and sometimes old coins are spent by the careless, but if a number of 90-percent silver coins are found mixed with cents and nickels from 1968 or earlier, or 35-percent and 40-percent silver coins found with cents and nickels from 1970 or earlier, their date of loss should be assumed to be before the coins were removed from circulation. No United States coins are ever demonetized, but when their bullion price exceeds their face value, they leave circulation even more quickly than if a powerful authority had ordered it.

Around 1980, collectors and hoarders began offering more than face value for the "wheat back" Lincoln cents of 1909 through 1958. The older cents from 1909 to the 1930s already had an elevated market value, but common cents of 1956 or 1957 with mintages in excess of one billion will never be rare. They are now of unfamiliar design, and are desired enough by those who hoard older Lincoln cents that their price has risen above one cent. When the price offered by coin dealers reached one and one-fourth cents each, that is two and one-half mils above face value, they disappeared from circulation in a matter of weeks. So while strays can turn up at any time, it is a general rule that Lincoln cents of 1958 and before were not deposited in the soil after about 1980, but a Lincoln cent dated 1959 may have been dropped yesterday. A five-cent piece dated 1942 through 1945 with a large mint mark atop the dome of Monticello is unlikely to have been dropped after 1970, but an older Jefferson nickel from 1938 may have been dropped this morning. A worn silver quarter from 1917 may have been in circulation in 1964, but it would no longer have been circulating in 1966.

In many homes, not necessarily those of coin collectors, silver coins were (and are) set aside in drawers, boxes, or cubby-holes, and retained because it is well known that they are worth more than face value. Finding them in such locations does not help much with dating, although they would not have been separated out before 1965. But they may have been put there in 1966, or they may have been put there in 2014, and they would look just the same. When coins come out of circulation, they acquire wear very slowly if at all. A silver coin from 1953 that circulated until 1965 will be rather worn, but a silver coin from 1964 never had an opportunity to become worn, and will look much the same in 2015 as it did in 1965.

## *The Post-silver Era in the United States*

With two exceptions, the composition of each US circulating coin has remained the same since the removal of silver between 1965 and 1970. The cent is one exception, having changed from


**Figure 3.29.** The Eisenhower dollar was not used much outside of casinos but was produced from 1971 to 1978. The Susan B. Anthony dollar seemed to the general public to resemble the quarter far too much and was only made for three years from 1979 to 1981 before a brief resurrection in 1999.

bronze in early 1982 to copper-plated zinc later in 1982. The dollar is another exception. The Eisenhower dollar, a copper-nickel coin the size of the old silver dollar, saw some circulation (particularly in Nevada) from 1971 to 1978. In 1979, the Susan B. Anthony (SBA) dollar was introduced. Government officials had careful surveys done of people's reactions to coins of various sizes, and then ignored or twisted the results. For example, a large number said they thought a dollar coin should be the size of a silver dollar. All such answers were eliminated from consideration, on the grounds that they reflected a desire not to have a circulating dollar coin.

Government officials and well-paid consultants also studied the experiences of countries that had eliminated their low-denomination banknotes in favor of a circulating coin with a value around a dollar or two. They then proceeded to violate in practice every lesson they had learned abroad. For example, they learned that the new coin must be distinctly different in appearance and feel from other coins, that the stock of the new coin must be sufficient on the first day of its issuance so that the transition is seamless, and they learned that the number-one essential feature of a successful transition is for the equivalent banknotes to be taken out of production when the coin is introduced into circulation. In actual practice, when the SBA dollars were introduced, they were midway between a quarter and a half-dollar in size and similar in composition and design, so that the new dollars were frequently confused with quarters. An inadequate supply was on hand at the beginning of the process, and the printing presses churned out banknotes at record rates as the coins were placed in circulation. To the great surprise of those in charge, the coin was not a success, and people refused to accept them. Minting stopped in 1981. As of this writing, the Federal Reserve still has many millions of them in storage.


**Figure 3.30.** Sacagawea dollars were issued beginning in 2000 and are still made each year in small numbers for collectors. The presidential dollar series started in 2007 with George Washington and by 2012 had reached Grover Cleveland, shown here. Grover Cleveland Dollar photograph from United States Mint.

As the year 2000 approached, officials once again studied how to replace the dollar bill with a coin. They fixed one thing; they decided that the new coin's color would be a golden bronze, distinctly different from lower-denomination coins. However, the size was left the same as the SBA dollar, and the dollar bill was retained. The new Sacagawea dollar was doomed. It had some early success, as ticket machines in many major cities were set to take dollar coins for transit fares, and there were even some millions of new SBA dollars struck with a 1999 date to make sure enough dollar coins were available. Nevertheless, the Sacagawea dollar was put into use in dribs and drabs, with no adequate supply available, and the ready availability of dollar banknotes meant that ticket-vending machines were practically the only thing for which anyone needed the coin. For "marketing" reasons that defy common sense, the coin was heavily promoted in very expensive advertisements as the "golden dollar," well before they could actually be obtained, and those who got some promptly put them away, often believing that they were too valuable to spend. Over the next few years, the machines were reset to take banknotes or credit and debit cards, the US Postal Service removed the stamp machines that also took dollar coins, and banks refused to make the Sacagawea dollar available to their customers. Meanwhile, dollar banknotes rolled off the printing presses, and the dollar coin sank again into invisibility. A later program introducing presidential dollars, at five presidents per year, barely stirred the public consciousness.

A one-year Bicentennial design was issued in 1976 for the 200th anniversary of national independence, just for the quarter, half-dollar, and dollar. The old designs came back in 1977. Many new coin designs were introduced beginning in 1999, with circulating commemorative quarters replacing the former design, first a series for the states, then the territories, then the national parks. Commemorative designs for circulating nickels and cents came a little later, and the former principle that rarely changing designs maintained confidence in the currency has been discarded. Even the paper money has been made more colorful, and designs are changed frequently.

The national mints now have a much more complex job than before. Since 1982, many commemorative coins and special sets of coins with proof finishes, different metallic content, and new designs have been a major product of the mint. The coins do not circulate, though they are technically legal tender, as they have a value to collectors higher than their face value. They will be found rarely by future archaeologists, and do not belong in this survey of circulating coins. All may be found listed, in great detail and with all their varieties, in any standard catalog that lists US coins.

## Recent Canadian Coins

The silver was removed from Canadian coins during 1968. Each denomination had a special design in 1967 to honor the centennial of confederation, and other commemorative designs were introduced frequently, in an accelerating process that continues today. The one-dollar banknote was replaced with the one-dollar "loonie" coin in 1987, so called because it features a loon on the reverse. The two-dollar banknote was also replaced in 1996 with a coin. While it features a polar bear on the reverse, it has been nicknamed the "toonie," as it is the two-dollar coin of the series that includes the loonie. Some Canadian jokesters describe the two-dollar coin as "showing the Queen with a bear behind."

Another significant change is the omission of the cent from the Canadian coin series starting in 2012. The government plans to eliminate it entirely from circulation, though it will not be demonetized. What the people decide will be revealed over the next few years. Coins of almost identical value are readily available nearby, and cross-border circulation along the US-Canadian border would not be a new thing.


**Figure 3.31.** The first mass minting of circulating commemorative US coins was for the Bicentennial. The quarter and half-dollar shown here are dated 1776–1976. and had special reverse designs. The next circulating commemoratives were the state quarters issued starting in 1999 in the order in which the states ratified the Constitution or were admitted to the union; the Oregon quarter of 2005 is a typical example. Upon completion of the state series in 2008, it was extended by a year by inclusion of territories, the District of Columbia, and the Commonwealth of Puerto Rico. The next series of quarters, starting in 2010, commemorated parks and monuments and were grouped as the "America the Beautiful" series. The Denali quarter of 2012 shows Alaska's largest mountain under its local name. The first commemorative five-cent coins celebrated the Lewis and Clark bicentennial and had a new portrait of Thomas Jefferson on the obverse. The first example shows a keel boat, and the other indicates Lewis and Clark's arrival at the Pacific Ocean. Still another portrait of Jefferson was used for regular five-cent coins starting in 2006, including this example from 2015. The first four commemorative cents were issued in 2009 for the bicentennial of the birth of Abraham Lincoln, including the cent with the Capitol, minus its dome, as it appeared during the Civil War.


**Figure 3.32.** Canadian pocket change around 2001: cent, 1993; 10 cents, 1991; 5 cents, 1993; 5 cents with "P" for "plated" under bust; 25 cents, 1985; 1 dollar "loonie," 1987; 2 dollar "toonie," 1996.


**Figure 3.33.** 5-cent Confederation centennial commemorative with snow rabbit, 1967; 25-cent millennium "Tribute to the First Nations" commemorative, October 1999; 25-cent Queen Elizabeth 50th year of reign commemorative dated "1952–2002;" "loonie" dollar with maple leaf described by the mint as a security device, 2012. Photograph from the Canadian Mint.

As in the United States, the Royal Canadian Mint is constantly busy producing noncirculating commemoratives, bullion coins, special strikes, off-metal coins, and so on, and so forth all for sale to collectors. These coins do not enter circulation but may be identified from any standard coin catalog that covers Canadian issues.


**Figure 3.34.** The shrinking peso: 72 percent silver, 1943; 50 percent silver, 1948; 30 percent silver, 1950; 10 percent silver, 1963; copper-nickel, 1982; stainless steel, 1987.

## Recent Mexican Coins

Silver left circulation in Mexico twice. The old silver standard of 72 percent was dropped after 1945, and new coins with decreasing percentages of silver were struck from 1947 through 1953. The peso was struck with the very low silver content of 10 percent (but silver plated) from 1957 through 1967. Other, larger coins were struck with higher percentages of silver, but these coins were not used in trade, so much as hoarded, or bought and sold, much as bullion coins are today. The last silver coin that saw any use in trade was the 1968 Olympic commemorative twenty-five peso, of the old 72 percent standard. It was entirely out of circulation by 1970, as the silver price rose.

Gold coins were struck in Mexico, but were used as bullion coins for saving or investment, and had no use in regular commerce.

During the years until 1992, smaller coins with higher face values were issued, until the one-thousand-peso coin featuring the poet Juana de Asbaje was produced of aluminum-bronze from 1988 through 1992 (see figure 3.35). *Sor* Juana had appeared on the old 1,000-peso banknote. Most of the new inflationary coins reproduced the central design elements of the corresponding banknotes. On the first day of 1993, a new currency was issued, and one thousand old pesos were exchanged for one new peso. The new coins, produced over the previous year, were dated 1992. The international exchange at this point had three new pesos as equivalent to about one dollar. The new peso dropped too but not nearly as fast.

The new 1992 five centavos and ten centavos were made from stainless steel, the twenty centavos and fifty centavos were of aluminum-bronze, and the new peso, two pesos and five pesos coins were bimetallic, with an aluminum-bronze center in a stainless steel ring. But the ten pesos and twenty pesos coins brought back silver. They were bimetallic with a silver center enclosed by an aluminum-bronze ring. Alas, the peso went down, silver went up, and by 1996 the part-silver issues were no longer being made and were replaced by base-metal versions.

The *nuevo* peso has now been renamed the peso, and coins similar to those of 1992 continue in circulation, although the peso stood at six and one-half US cents in June of 2015. The Mexico City Mint, like its Canadian and US counterparts, is busy producing not only coins for circulation, but bullion coins, special strikes, commemorative issues, off-metal coins, medals, and so on, which find a ready market among collectors. They are not found in circulation, and may be found in standard catalogs that list Mexican coins.

Even in hard times, many people do not bother to pick up a low-denomination US or Canadian coin when it falls to the ground, as the low denominations (even up to the dime) are worth less than a cent was in the 1930s. This will provide many artifacts for future archaeologists to find. But in Mexico, the old base-metal currency is literally worthless, except as metal scrap, and to collectors who generally already have them. The result is that many, many pre-1992 Mexican coins have entered the archaeological record since 1992, some through carelessness but many through the play of children. Just about all that non-silver old pesos are good for anymore is for children to play with them.


**Figure 3.35.** Above: Hundred-peso banknote from Mexico, 1981, with replacement coin, 1987, both showing Venustiano Carranza. Below: Thousand-peso banknote of Mexico, 1984, with replacement coin, 1988, both showing the poet Juana de Asbaje (85 percent of actual size).

**Figure 3.36.** Mexican coins after the reform of 1992: 5 centavos stainless steel, 1994; 10 centavos stainless steel, 1995; 20 centavos aluminum-bronze, 1999; 50 centavos aluminum-bronze, 1992; new peso bimetallic aluminum-bronze in stainless steel ring, 1995; 2 new pesos bimetallic aluminum-bronze in stainless steel ring, 1992; 5 new pesos bimetallic aluminum-bronze in stainless steel ring, 1992; 10 new pesos bimetallic silver in aluminum-bronze ring, 1992; 10 pesos bimetallic stainless steel in aluminum-bronze ring, 1998. The higher denominations shifted from "nuevo peso" to "peso" in 1996, at the same time the last silver was taken out of the coinage.

# Asian Coins in North America

## Why are Asian Coins Found in North America?

Asian coins have been widely scattered across the landscape of North America, from Alaska to Mexico. They were imported in association with two specific historic episodes: first of trade and second of immigration. The first coins were imported as part of the Pacific Northwest fur trade and were among commodities and materials traded for fur pelts. Coins were brought to the Northwest by traders of several nationalities who stopped in Chinese ports on their way east to trade with native people in Alaska and the Pacific Northwest beginning before 1785. Once traders discovered that the copper and ***brass*** Chinese coins were highly prized for their metallic content, they began to pick them up in China in large quantities. They were widely distributed across the area and are often recovered from Native American sites dating to that period.

The coins that were selected for the fur trade were taken from the coins in circulation in China at that time, mainly in the central and northern ports. This included some coins that had just been issued from the mints, and many others that were centuries old. This is why many coins recovered from sites in the area, or collected by ethnographers later, have reign dates that are much earlier than the late eighteenth century when the fur trade began in the region. Though a few of the sailors were Chinese, it is important to remember that the coins are not evidence of the presence of Chinese people; they just indicate that some of the material culture of the Chinese reached the area.

**Figure 4.1.** Large early Qing *wen* of types that arrived in the Pacific Northwest as a part of the fur trade.

Farther south and beginning about seventy-five years later, we find evidence of the second wave of activity that brought Asian coins to America. Beginning in 1849, Chinese people, mainly men, came to North America along with others from many parts of the world to seek their fortunes in the gold fields of California. After the first flush of the gold rush wore off, Chinese workers continued to find employment building railroads, irrigation canals, levees, and even making the very bricks used to build the new cities. These Chinese people brought some coins with them and had even more of them shipped from home for several nonmonetary purposes. Again, the coins were those in circulation in Chinese ports at the time, although these ports were mainly southern. As the importation of coins continued for a period of more than sixty years, the mix of imported coins changed as the mix of coins in circulation in southern Chinese ports changed.

### *Why Wen and Dong Could not have Circulated as Money*

Chinese coins and similar Asian coins were never used as circulating currency anywhere in North America, so they have been separated from the other coins that are discussed in this book. There were many ways that the coins could be used, and they were more valuable for those uses than they were as money. Fur trade coins were primarily exchanged to be used as decorations and as markers of status. Later, when Chinese people arrived in North America in large numbers, they imported coins for use in a wide range of noncurrency activities, such as gambling, and to use as religious talismans. In both circumstances the imported Chinese coins had a greater value for the purposes for which they had been imported than they ever could have had as circulating currency.

A basic principle of monetary theory is that no object can circulate as money if it has a substantially greater value when

removed from circulation. All of the Asian coins recovered in North America had very low value at home as circulating currency. For example, a string of roughly one thousand Chinese ***wen*** traded for about one silver ***dollar*** in China, with many variations, or about one-tenth of a cent each. Once they were imported across the Pacific they were only used for noncurrency purposes. They were fewer in number here as well, and the combination of factors contributed to a higher value as talismanic items, gambling equipment, and decorative items, than they would have had as circulating small change. An additional factor to consider is that copper small change of any sort was not used along the West Coast until after the Civil War.

Two examples demonstrate the numismatic principle that coins cannot circulate as money if they have a greater value for another purpose. In 1965, US copper-nickel dimes and quarters were released into circulation to replace earlier, part-silver coins. Growing nonmonetary industrial uses of silver, and a restricted supply, had caused the market price of silver to rise to uneconomical levels for use in existing coinage. Silver and copper-nickel coins circulated together briefly, but further increases in the price of silver made the illegal melting of silver coins very profitable; silver coins disappeared from circulation in a matter of weeks. Silver coins had acquired a substantially greater value when removed from circulation and used in other ways, so they ceased to circulate as currency.

In an example that more closely parallels that of Asian coins in the New World, coins of value to collectors are removed from circulation even when their value as a collectable is only slightly higher than their value as money. By 1988, US Lincoln cents minted prior to 1959 ("wheat" cents) had disappeared from circulation. Coin dealers paid one and one-fourth cent apiece for copper cents in order to obtain them for resale to their customers. Although this was equivalent to 25 percent over face value for them in quantity, the disappearance from circulation of a coin with a premium of as little as a quarter-cent demonstrates that a very small rise in price over the circulation value suffices to remove a coin from the circulating currency (Fred Coops, personal communication, 1988).

Coins were plentiful in China; billions having been minted each year for long periods, though local shortages did occur. The wen that were needed for export for nonmonetary uses could be removed from circulation without substantially reducing the money supply at home. However, in the United States, only relatively limited numbers of wen were available. Inflation resulted in a complete lack of demand for any copper coins during the Gold Rush and would have prevented their circulation in California at that time. After 1865, a reliable supply of coins of all denominations became available in the West, and there was no longer a need for private or foreign currency. From that point on, the nonmonetary uses of wen would have kept them out of monetary circulation even in the Chinese community.

A report by a local historian and member of the Chinese community of Locke, California, helps demonstrate that the coins were never used as money. Ping Lee, a senior life-long resident of this Chinese community in the Sacramento-San Joaquin River Delta, was interviewed on the subject of Chinese coins, about which he showed considerable knowledge. When asked if Chinese coins circulated as money, Locke responded, "I never heard of such a thing. People just kept them for sentimental reasons." He also reported that his grandmother had told him that when the coins were used in games, the Qiánlóng coins were favored because they were so sturdy (Ping Lee, personal communication, 1988). With the only source of supply on the other side of the Pacific, the value of wen, ***dong***, and ***mon*** for noncurrency uses would have been higher than their value as circulating currency. Therefore, it would be extremely unlikely that these coins would have been used as money.

## The Types of Asian Coins Used in North America

Information needed for identifying Chinese wen, Vietnamese dong, and Japanese mon can be found in this chapter. Descriptions of the coins and how they are made, as well as some information about the history of their use both before and after their importation to North, can also be found below. Suggestions for analyzing the role of the coins in the life of the North American community from which they were recovered can be found along with some examples later in this chapter. No attempt is made here to show every possible Chinese, Vietnamese, or Japanese coin that could conceivably show up in a North American context. The major types of coins covered include:

- Chinese wen from 1664 through 1911 and a few older pre-Qing coins known to have been recovered from North American sites;
- Vietnamese dong from 1740 through 1883;
- Hong Kong mils or wen of 1863–66; and
- Japanese mon, produced between 1626 and the 1860s, that circulated in southern China together with Chinese coins during the later 1800s.

As some Korean coins are reported to have circulated in China, along with the Japanese and Vietnamese coins during coin shortages, an example of a Korean coin is shown to help identify

**Figure 4.2.** No high-denomination coins of the 1850s and later have been found at sites in North America. Any high-denomination coins that are recovered are likely to be from collections or to be recent fakes or fabrications. The two genuine examples here are ten-*wen* denominations from 1853 (the larger), and about 1864 (the smaller). Both circulated only in the Beijing area, far from the southern ports from which Chinese immigrants in North America obtained their wen.

them should some be found in North America. In each country, there were many other coins or other kinds of money of higher denominations, but they were not imported into North America for the uses described in this book. Only collectors or coin dealers brought the higher-denomination coins to North America, and none have yet been recovered archaeologically on this continent.

## *Chinese Coins*

Coins developed in China about 2,600 years ago, and a multitude of Chinese words have been used over the millennia to refer to various types of coins. The most common word for the lowest-denomination brass coins in nineteenth-century southern China appears to have been wen. Another word for coin, often considered more formally correct, is *qian* (*ch'ien*), but *qian* can refer to coins of larger denominations as well and is not as specific as wen. All Chinese and Vietnamese coins that featured the central square hole were sometimes referred to by English speakers as *cash*, which is from a word for small copper coins used in several languages of southern India. The word *cash* has several other meanings in English, and was never used by the Chinese themselves, even though it appears on some turn-of-the-twentieth-century Chinese coins as part of the English-language inscriptions. Wen are composed of brass or copper alloys that vary according to the mint and year of production.

### Qing Period Currency Systems (1644–1911)

After an initial period of economic experimentation during the war years following the establishment of the Qing dynasty, attempts to establish a standard of one thousand wen to the ***tael*** of silver were abandoned. Traditional methods of influencing the currency supply were continued, with the principal method being the opening and closing of mints. It was easier to control the opening and closing of provincial mints than it was to keep control over their production while they were in operation. As had been the case for centuries, the exchange value of the wen against silver fluctuated from time to time and place to place, often frustrating officials in the process.

New World silver poured into China shortly after the Spanish began exporting it from Mexico and Peru, and as much as half of all silver mined in the Americas ended up in China. Much of this silver was imported in the form of "Spanish dollar" coins (eight *reales*) approximately the size of a silver dollar. Although wen were the only coins produced in China from 1644 until the higher-value cast currency of the mid-nineteenth century, they were not the only coins used in China during this period. Silver-dollar-size coins of many countries were in circulation, and their numbers just kept increasing until the Chinese began mass-producing their own silver coins in 1889 (Coole 1963:5).

**Figure 4.3.** This silver *ocho reales* coin with "***chopmarks***" was stamped with small characters and designs by merchants and moneychangers while in circulation in China.

Regional differences in value of copper and silver coins were sometimes considerable. Silver tended to be cheaper close to the ports, and copper tended to be cheaper close to the mines. The large copper mines of Yunnan, especially, kept copper prices low on the upper Yangzi River.

Exchange quotations, which may be obtained from many references, must be examined skeptically and with a close study of the context. Some do not refer to actual coins in circulation, but to a normative coin to which actual coins were compared on a case-by-case or string-by-string basis. The coin declared "typical" by official edict, or the decision of major merchants in response to market conditions, could also vary.

When coins were plentiful, provincial mints often were closed, and production centralized in Beijing. In some cases the mints of Yunnan were the only non-Beijing mints in operation because the price of copper in Yunnan was relatively low, and the province exported coins to neighboring provinces to buy other commodities.

In 1889 modern minting methods were introduced to China with the opening of the Canton mint. Over one billion brass wen were struck over the next eighteen years, and in 1900 the striking of copper cents, nominally equal to ten wen, commenced. The new machine-struck wen are often found at North American Chinese sites occupied after the early 1890s. Machine-struck coins were the rule by 1900 and the last official cast coins were produced shortly after the 1911 revolution (Hartill 2005:431). The struck coins were often favored for use on sewing baskets and dangling, decorative parts of ***coin "swords"*** and other talismans because of the matching polished surfaces that were produced by machine striking.

**Figure 4.4.** An undersized posthumous issue in the name of Dao Guang (1821–50), actually minted several years after his death. The Guangdong mint name may or may not represent its actual area of production.

Some undersize wen were produced during the Taiping Rebellion (1850–64) in both rebel and imperial-controlled territories. Although they were produced under various levels of government authority, many are considered "counterfeits" by most Chinese numismatists and don't appear in standard references and catalogues. Archaeologists, however, cannot ignore them. These smaller wen set the standard for circulation in much of Southern China during the period and were the model for the Hong Kong ***mil*** of 1863. Many undersize wen came to America and were used as gaming pieces, though apparently not for talismanic purposes, for older and larger coins were preferred. A confusing aspect of these undersize coins is that many bore ***reign names*** from earlier periods. However, they can be assigned a production date from about 1850 to 1864 based on their small size, in spite of misleading reign names.

In China, wen were usually stored and carried in "strings" of 1,000 or multiples of 100 when more than a few coins were involved. (When counted, the nominal 1,000 often turned out to be 975 or 980.) Coins placed into storage, or being prepared to ship overseas to be used or sold as gaming equipment, were sometimes packaged in that way, but most strings were broken

up once the coins shifted to nonmonetary uses. Wen had a value of about one thousandth of a silver dollar in China during the nineteenth century and were described in contemporary American English-language reports as worth one-tenth of a cent. In practice, the exchange rate in China often varied, from as few as six hundred to as many as two thousand wen to the silver dollar (Peng 1994).

## Description of Wen

All wen of the standard range of sizes were accepted and used as money in late Qing China**, no matter how old they were,** until well after the end of the Empire in 1911. It is difficult to believe that a small coin could circulate as money even two thousand years after it was produced, but this fact must be taken into account when analyzing recovered coins. For an archaeologist, this is probably the single most important aspect of the use of these coins in North America and needs to be kept in mind at all times.

A clear example of the fact that coins tended to stay in circulation, or return to circulation, over very long periods comes from numismatic literature. In 1876 in Shantou, numismatist and author F. Schjöth, a customs official, was able to form a collection of Chinese coins "by now and then sending [his] servant down town with a dollar or two to bring back strings of cash. In a comparatively short time I had, strange to say, obtained a respectable collection, not only of Ta-ch'ing [Qing], Ming, and Sung [Song] coins, but also of K'ai-yuans of T'ang and even of Wu-shus and Pan-liangs, which dated from the beginning of the Christian era" (Schjöth 1965:i).

**Figure 4.5.** Pre-Qing coins like those found in circulation in 1876 by Schjoth: Kai Yuan (118 BCE–617 CE); Kai Yuan (618–907) of the Tang dynasty; Tian Sheng (1023–1031) and Zheng He (1111–1117) of the Song dynasty, and Wan Li (1573–1620) of the Ming dynasty.

On many occasions officials declared some or all of the coins of earlier dynasties demonetized, but if these declarations received much notice, they were not in effect for long. Because it was the socially recognized value of the copper content of the coins that usually determined the currency value of the coins, rather than the inscriptions (or imperial edicts regarding the coins), coins stayed in circulation for centuries.

Most wen recovered in North America date from the Qing dynasty (1644–1911) and range in diameter from about 18 to 28 mm. Qing wen have four Chinese characters on the *obverse* (front). The characters to the right and left of the hole translate into English as something like "circulating currency." The top and bottom characters give the ***nian hao***, or reign name of the current emperor. Each emperor, in consultation with historians, astrologers, and political advisors chose a slogan-like name for his reign to be used instead of his personal name. Reign names have both political and religious significance, and they have a multitude of nuances and possible translations. No individual year of production is written anywhere on the coin itself, but the reign name tells us the range of years during which the coin was made. Standard references for Qing dynasty wen include Hartill (2003, 2005), Jen (2000), Peng (1994), and Schjöth (1929, 1965). Each century from 1601–1700 through 1901–2000 is covered in the Krause-Mishler *Standard Catalog of World Coins* series, and these volumes also include coins of Japan, Vietnam, Korea, Hong Kong, and other Chinese coastal enclaves from the particular periods. As a detailed reference to Chinese cast coins, Hartill (2005) is now preferred.

Almost all Qing coins bear mint names on their reverses indicating where they were cast or struck. The mint name is a single syllable written in the phonetic Manchu script, sometimes accompanied on the earlier coins of the dynasty by the Chinese character for the same syllable. Later coins have another Manchu word to the left of the hole, *boo* (*bao* in Chinese), meaning "mint." Qing wen all have a raised rim around the edge, equal in height to the height of the characters, but varying in width. A narrow raised rim of the same height surrounds the square central hole.

Wen are composed of brass or other copper alloys or (in earlier times) iron. The exact content varied according to the location and year of production (Wang 2005). Although there were strict official rules on the metallic content, mint masters often made substitutions even in Beijing, and in some remote provinces the guidelines were practically ignored for years at a time. As a result, the metallic composition of wen vary widely, resulting in different types and degrees of corrosion even when they are recovered from the same environment.

## Avoiding Confusion

The cast coins of China, and coins that were copies of that design and used in Vietnam, Korea, and Japan, before the introduction of machine-struck coins can look alike at first, especially to anyone who does not read Chinese characters. It is a common mistake to classify non-Chinese coins as wen, but that particular mistake can result in the loss of important information.

If a coin looks similar to one shown here, but has a different character in one position, it is an entirely different coin. The reader is urged to consult the available references on Chinese and other Asian coins to identify most coins of dynasties earlier than the later Qing, which was founded in 1664. There were also some cast and struck wen issued after the overthrow of the Empire in 1911, but none have yet been recovered in North America. While dedicated archaeologists and numismatists may burn the midnight oil, it is not a good idea to try to distinguish Manchu mint names or Chinese reign names when you are bleary eyed. A single stroke in an unfamiliar inscription may change the meaning entirely. Manchu is written in a phonetic script, and you may confidently but mistakenly identify a coin from the Board of Revenue mint in Beijing (*ciuwan*) as an issue from Sichuan (*cuwan*) because they sound similar, and therefore look similar in a phonetic alphabet. A Board of Works product from Beijing (*yuwan*) may be mistaken for a coin from Yunnan (*yun*) because they, too, sound similar and thus look similar.

There are also varieties of each of the coins, significant to collectors, which are not distinguished here for two reasons: there

are too many varieties to list in this short space, and as such fine details were not distinguished in circulation or by those engaged in nonmonetary uses of the coins, they are of little help to an archaeologist. Some varieties involve fine details of the characters on the obverse. Other varieties are marked by dots, lines, or indistinct shapes in the ***fields*** on the reverse, usually at the top or bottom. Some are probably random accidental marks, others are intentional, but it is hard to know which is which.

On the other hand, the varieties that are often significant in analysis are differences in the diameters of the coins, especially when examining and comparing entire assemblages of the coins. Again, it is often hard to know the reasons for the variations, especially when the differences are small, though large variations are often important indicators of periods of manufacture, and some "small" or "large" varieties were issued in completely different periods of mint operation. Since the selection of coins destined for export to North America was made on the basis of how they were going to be used, and not by what was written on the coins, archaeologists should record the diameter of every Asian coin of this general type in millimeters, as different sizes of coins were sometimes preferred for the various reuses of wen and dong.

### Counterfeits, Replicas, and Forgeries

Very small coins, as noted earlier, were usually issued during the 1850–64 Taiping Rebellion, often by mints that were under the control of local authorities rather than the central authorities on either side of the conflict. Some of these coins bore the names of previous reigns. Traditionally, Chinese numismatists have dismissed many of these coins as counterfeits. In fact, most were issued from mints under the control of government officials, and some official coins of both Hong Kong and of the imperial government were later issued in this small size, reflecting their persistence in circulation in southern China. Starting at many mints around 1898, and at most mints from 1906 to 1911, the small size returned. Archaeologists should not dismiss small, thin coins that do not appear in catalogs but rather record them carefully and note any specific uses to which they may have been put in North America. Eventually, distribution patterns, among other findings, may emerge with comparative assemblage analyses of North American finds.

As is the case with many other coins, copies of Chinese wen have been produced for various reasons. Some are contemporary counterfeits that entered circulation in China, though the fact that these coins usually were valued at roughly the price of their raw materials reduced counterfeiting. Unless the contemporary counterfeits were very sloppy, they may be difficult or even impossible to detect (and some official mints could be a bit sloppy, too). Other forgeries were skillfully made later (and are being made today) to fool collectors. These are of little importance to North American archaeologists because they were all produced after the period during which Asian coins were imported for use in North America, from roughly 1850 to the 1920s. During that period, small numbers of forgeries were being made of much earlier, rare coins to cheat collectors. Such forgeries were never in circulation. However, an archaeologist should know about the mass-produced "Qing coins" coming from Guangdong Province and its neighbors over the past thirty years. These coins can be found in packages that are prepared to look like examples from every Qing reign, or as coins from "ancient China," made as souvenirs, and sometimes sold as real coins. While US federal law requires that imported imitation coins all be marked "copy," none of these forgeries are ever marked as such.

In other cases, crude replicas are used as buttons or decorations for clothing or as parts of jewelry. They are almost always machine struck from dies engraved to look like cast coins. Imitations of real Chinese coins were and continue to be used for these purposes partly because it is easier to make perfectly matching sets of coins than it is to find older matching coins, especially if similar patinas are also desired. Such replicas may be recovered as random surface finds and have no relationship to the Chinese population movement of the late nineteenth and early twentieth centuries.

### Inscriptions

The material below is intended as a beginners guide. For accurate and complete identifications it is necessary to consult a catalog for fuller information, to distinguish varieties, and to search for coins not listed here.


**Figure 4.6.** Qing reign names are shown on each coin as the top and bottom characters on the obverse. The characters to the right and left say *tong bao* (circulating currency).

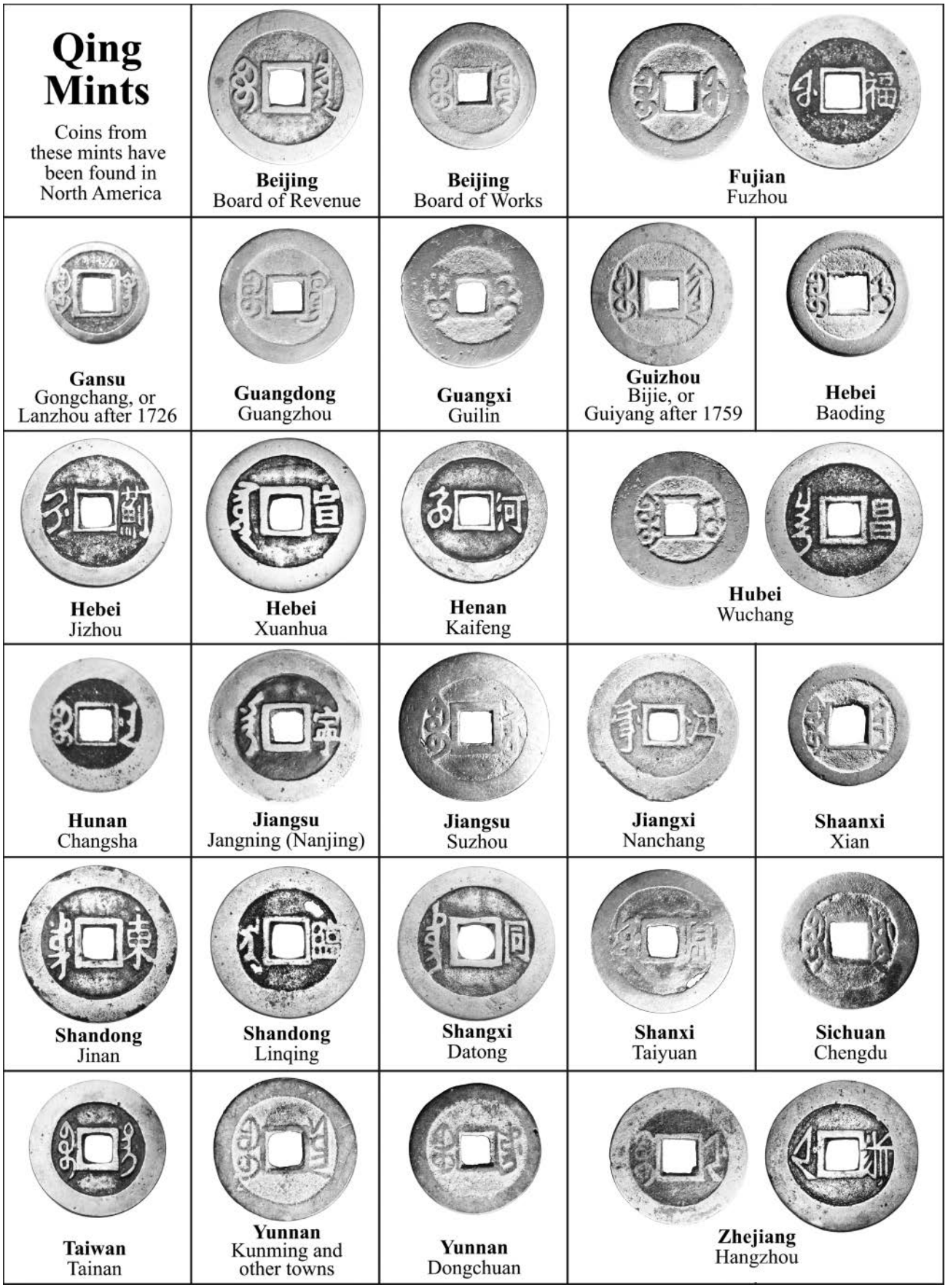


**Figure 4.7.** Qing mints from which coins have been found in North America or are likely to be found.

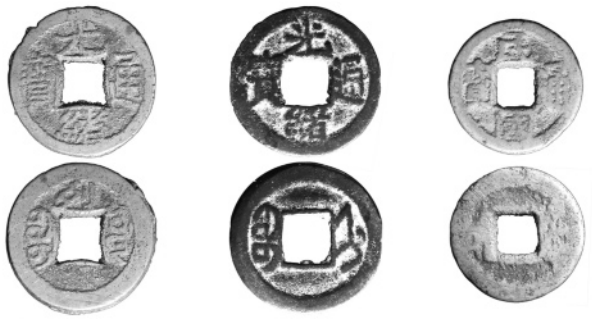

**Figure 4.8.** Less and less copper went into coins at most mints toward the end of the Qing dynasty. The coin with a character over the hole on the reverse is from the Baoding mint and was made in 1899. The center coin is also from 1899, from the Board of Works mint in Beijing. Slightly smaller is one of the last-cast wen, made in 1912 after the fall of the empire, with the inscription "Min Guo" (people's country, or republic) on the obverse, and a barely readable Yunnan mint name in Chinese on the reverse. When the Manchu emperors fell, coins no longer bore Manchu-language inscriptions.

**Figure 4.9.** Machine-struck coins of the Guangdong mint. The first issue at this mint, supervised by foreigners, used the unorthodox reverse inscription "treasury scales one *qian*" with the Manchu "*guang*" for Guangdong. It was minted in large quantities during 1889–90, until replaced by the more orthodox reverse bearing the Manchu words "boo guang" as the mark of the Guangdong mint. The larger size was minted until 1906 when the size of the average coin dropped again, and a smaller coin was minted until the end of the reign in 1908. The first smaller coin, like the larger ones, bears the Guang Xu reign name. At the end of 1908 the new Emperor Aisinguoro Puyi began his reign at the age of three, and by early 1909 new small-size wen were struck with the reign name Xuan Tong. These were produced until the end of the dynasty in early 1912.

### Hong Kong Mil or Wen

From 1863 to 1866, small bronze coins meant to circulate as one-thousandth of a silver dollar were struck in England for use in Hong Kong and neighboring parts of China. A total of some 79 million were made during a period when the population of Hong Kong fluctuated between 115,000 and 125,000. The coins were inscribed "***mil***" in English and "wen" in Chinese in 1863 and 1865, though this changed to "qian" in 1866. *Qian* is not a


**Figure 4.10.** The 1863 Hong Kong mil is inscribed "Hong Kong one wen" on the reverse, using the specific name for the denomination. At that time, small *wen* of this size were the circulating currency in coastal Guangdong. After the Taiping Rebellion ended in 1864, larger coins came back into circulation for a time. On the reverse of the 1866 mil, the Chinese says "Hong Kong one *qian*," using a general term for a coin.

denomination, but simply means a copper coin. Coins from all three dates have been found in secure archaeological contexts in North America, but their numbers are small.

The Hong Kong mil was intended to circulate along with the small Chinese coins then current in coastal Guangdong Province; most of them were products of the temporary mints of the period of the Taiping Rebellion (1850–64). By 1866, the larger coins of former times had returned to circulation, and the mil was undersize, though it continued to circulate (along with the other undersize wen) for many years with a value lower than the larger wen. Production of the mil was discontinued after 1866.

The Hong Kong mint was shut down in 1868, and the silver dollar of 1866–68 and the half-dollar of 1866–67 were also discontinued, though the five-cent, ten-cent and twenty-cent coins, first struck in Hong Kong, were struck at English mints through the rest of the nineteenth and into the twentieth century. While all these higher-denomination coins were intended mainly for circulation in Hong Kong, they all circulated to some extent in neighboring areas of Guangdong Province. None of them were exported to North America, because none except the mil met the requirements for the noncurrency uses of the wen across the Pacific.

### *Vietnamese Coins*

It can be difficult to interpret the appearance of the Vietnamese coins in North American archaeological sites without some knowledge of how various coins circulated in Southeast Asia. It is also necessary to pay special attention to the type of metal used, zinc, brass, or other copper alloys, when examining these recovered coins, called *dong*.

Vietnam was ruled by China during the period in which coins were introduced. The first independent Vietnamese currency was issued just over one thousand years ago. Vietnamese coins were basically identical in appearance to Chinese coins, and were manufactured and circulated similarly.

Beginning in a period of economic crisis during the Gia Long reign (1819–20), large numbers of coins were produced in zinc, a less expensive metal to use in coins. There were some attempts by the Vietnamese governments to give high values to some coins by simply marking them with a higher value, and many recovered zinc coins bear numbers on their reverses, some of which were intended as denominations, though most were weights. However, these inscriptions were generally ignored by Vietnamese merchants and were entirely disregarded when the coins circulated in China's Guangdong Province.

By the end of the Thiệu Trị reign in 1847, a complicated and quickly fluctuating exchange system had developed between

the various forms of Vietnamese money, in which zinc dong had their place. The zinc varieties of these coins were worth less than the brass coins in circulation, and the real relative values of the coins varied sharply. At one point during the Tự Dú'c reign (1848–83) a silver dollar was worth about 2,600 zinc dong, and ten zinc dong were worth one brass dong, but these relative values changed often (Cuhaj 2009:1265; Krause and Mishler 1985:2521).

In Vietnam, copper alloy coins were circulating at the same time as zinc coins of similar size and design. The copper alloy coins were preferred, and traded at a higher value than the zinc coins. French colonialists moved large numbers of struck copper coins into the Vietnamese economy starting in 1879, and by 1887 tens of millions of these colonial coins had become the basis of low-level transactions in Vietnam, though brass dong continued to circulate in some areas. Contemporaneously, large numbers of zinc (but few copper alloy) dong were introduced into circulation in Guangdong Province, and from there many were then shipped across the Pacific. This is why Vietnamese coins are found in North American archaeological sites in places where there were no Vietnamese people or any trade with Vietnam.

Examination of a large number of ***overseas Chinese*** sites has shown that zinc dong usually appear in assemblages deposited between the early 1880s and 1895, a result of the circulation patterns of the coins in the late nineteenth century. No zinc dong have been recovered from earlier sites, though a few brass Vietnamese coins have been found.

In Asia, it has not been possible to separate out groups of coins from datable sites with brief periods of occupation in order to determine when dong entered circulation in large numbers. But in America, temporary settlements of Chinese workers along railroad construction projects provide just the kind of sites needed to date this transition from copper to zinc dong.


**Figure 4.11.** Reign names on Vietnamese coins found in North America.

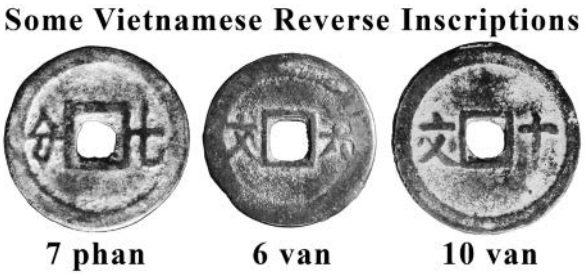


**Figure 4.12.** Reverse inscriptions of Vietnamese coins found in North America.

**Figure 4.13.** Obverse of Japanese *mon* with the Kan'ei era title, and reverses showing the Edo (left) and Osaka (right) mint marks. Most recovered Kan'ei coins have uninscribed reverses with no mint mark, but there are many additional mint marks that may be found.

### Description

The zinc dong of Vietnam were a grayish white when first cast, but soon take on a darker color, oxidize very easily, and are not as attractive as the brass or copper versions of the coins. They are quickly and severely damaged by fire and deteriorate rapidly in alkaline or acidic soils. Dong require special and delicate care when recovered from archaeological sites.

## *Japanese Mon (1626–1870)*

Coins were introduced to Japan from China, and the first coins produced in Japan were cast during the early 700s. From about 980 to 1606 no coins were cast in Japan, but the country's needs were supplied from China. Japanese coin production resumed in 1606 during the Keichō era, and the characters used on them were ***frozen*** beginning in 1624 during the Kan'ei era. Most Japanese copper alloy coins from this point until the middle of the nineteenth century bore the Kan'ei era title. Most mon have no mint marks, but some have single-character mint names at the top of the *reverse*.

### Japanese Coins Exported to China and Beyond

Japanese coins rarely found their way to southern China before the Japanese coinage reforms of the early Meiji period, starting around 1873. The new Meiji copper coinage was reformed in 1873 with the striking of *rin* and *sen* coins. One rin was approximately equivalent to one mon in the old copper coinage, and one sen was worth ten rin. By the mid-1870s large numbers of mon (and the Chinese wen that had circulated together with them in pre-Meiji Japan) were loaded on ships and taken to Chinese ports to be traded for merchandise. Due

to the coin shortage that began during the Taiping Rebellion, both wen and mon, all made of copper alloys, were eagerly accepted in the ports of Guangdong (Akin 1996).

As the mon were copper and similar in appearance, weight, and diameter to pre-1850 wen, some of them circulated in China well before the Meiji period. But only after the mid-1870s did mon commonly circulate in China. During the fur trade period of the 1700s and early 1800s, a few mon came to America among the wen imported to pay for furs. At a site where more than a few of the recovered coins are mon, it is likely that coins were being imported from China after 1875. Imported mon alone were insufficient to supply the coinage needs in Guangdong, so Vietnamese coins were used as well. It is not uncommon to find both dong and mon mixed with wen in sites in North America.

### *Korean Mon (1678–1888)*

While Korean coins have not yet been found in North America, some entered circulation in China during coin shortages. An example is illustrated here in order to show the general appearance of Korean coins of this period, so that if they are found in archaeological contexts they will be recognized.

Korean coins came into circulation in the northern part of China (Coole 1963:50), and the complete absence (to date) of Korean coins in the archaeological record in western North America tends to confirm reports that virtually all trade between China and the West Coast came through central and southern Chinese ports.

If they are found, it will most likely be in Alaska, British Columbia, Washington, or Oregon. During the fur trade period that ended before Chinese emigration from Guangdong, some of the merchant ships landed at ports in northern China and took on coins at those ports. This is shown in the mix of coins from the fur trade, with some coins of northern mints showing up that have not been found in post-1850 sites. To the limited extent that Korean coins circulated in China, they were used only in northern China.

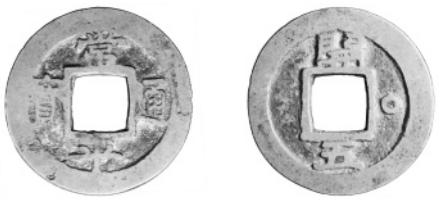

**Figure 4.14.** A Korean coin with typical obverse inscribed "Song P'yong T'ong Bo." Not a reign name, this translates as "always even circulating currency." The reverse of this example from the 1742–52 period bears at the top the character "Song" for the Kaesong Military Office, with the series number 5 at the bottom and a circle at right. There are thousands of varieties of the "always even" coins issued from 1633 to 1891.

## The Noncurrency Uses of Asian Coins in North America

As discussed earlier, Asian coins did not circulate as money in North America because their value for other uses exceeded their monetary value. Chinese coins were imported in two waves—one associated with the fur trade with the Native American and Native Alaskan populations, the other associated with Chinese immigrant workers.

The reasons why the coins were imported and the ways in which they were used afterward were not the same in the different locations or even at the same locations at different times. The various ways that they were used are so diverse that analysis of archaeological finds often requires a minimum of several coins for accuracy. When we use this type of assemblage analysis (looking at the characteristics of a group of closely related coins recovered from the same archaeological context) we significantly improve the accuracy of analysis. The chapters on archaeological analysis provide further information on the methods for this type of analysis.

### *Fur Trade and Native American Uses*

One of the most common and historically persistent uses of Asian coins is as decorations, attached to other items with strings, cords, leather thongs, and other fastening devices. The visually appealing Chinese wen were used primarily for this purpose by many tribes of the Pacific Northwest (Fitzhugh and Crowell 1988:231). Native copper, worked into various shapes by heating and hammering, was highly prized by people across the Northwest. So it is no surprise that the beautiful coins, already in a finished shape and arriving with holes conveniently included, were popular. Chinese coins have been recovered from fur-trade-period archaeological sites in Alaska (i.e., Yakutat 49-YAK-020), British Columbia (Chinlac Village Ga-Sv-1), and later sites in the Columbia Plateau. Later, in the 1880s, examples of clothing decorated with coins were collected by explorers, such as J. J. McLear, and they can be seen in ethnographic collections from the period (Akin 1992:109–16). Some of the clothing is so encrusted with the coins that they are referred to as "armor," as the overlapping coins are attached in such a way that almost none of the underlying leather can be seen.

**Figure 4.15.** Native American deerskin dress decorated with Chinese coins, US silver dimes and thimbles. The sound effects made by the dress when someone walked in it were an important part of the design. Photo taken in the lobby of the Field Museum in 1990; catalog no. 69135.

The status afforded by these items could be displayed by wearing clothing with many coins on important occasions. Such an event took place in the summer of 1792, when Jacinto Caamaño took his ship, the *Nuestra Señora de Aranzazu*, to investigate the territory in the vicinity of Nootka, British Columbia. He was acting under the orders of the Spanish court, and by the time he arrived it was obvious that British fur traders had been frequenting the coastal regions of the Queen Charlotte Group for five or six years and trading, among other things, Chinese wen. After Caamaño left this passage, here described his first encounter with Taglas Cania, an important chief, as part of a colorful and articulate account of his visit. It was among the first accounts of encounters with the Northwest Coast Native Americans written by Europeans. It clearly indicates that by the time Caamaño made his investigations, large numbers of Chinese wen were well incorporated into the exchange network of the fur trade:

> Cania came on board at 5 o'clock that evening. He is of very big frame, and stout proportion, with a handsome face, and is about seventy years old. His clothing, all of sky-blue cloth, consisted of two loose frock coats one over the other, ornamented with Chinese cash, each one strung on a piece of sail-making twine with a large light-blue glass bead the size of a hazel nut, loosely attached to the material, and together forming a button. His breeches, in the form of trousers, were also trimmed with many of these cash, so that he sounded like a carriage mule, as he walked.... He wore a headdress similar to that of the Tåsen; and, at a little distance, looked very fine in his extravagant costume. (Wagner 1938:219)

Although it may be difficult to pin down the first appearance of wen in North America, it can be established that some of the first ships involved with the fur trade, those of John Meares, were partially manned with Chinese crews (Meares 1790:57). Chinese sailors may have somehow started the trade or may have noticed the high value their trading partners placed on the coins. Herbert Beals has even suggested the possibility that Asian coins in the Pacific Northwest might have been associated with the Spanish Manila-Acapulco trade, although the only evidence for this in the Pacific Northwest has been the occasional appearance of Chinese porcelains and Indonesian beeswax, all of which might have been deposited from a single wreck, that of the *San Francisco Xavier* in 1705 (Beals 1983:23).

Native Americans, who incorporated these coins into items of clothing and other personal adornments, continued to use them as decorative elements on clothing and other body ornaments until the twentieth century. The Museum of Anthropology at the University of British Columbia holds in its collections a beautiful necklace and headpiece. Several examples of clothing that incorporated wen were obtained by exploratory expeditions and are now housed in important museums, such as the Burke Museum in Seattle (catalog numbers 2-452a and 2-452b). The Field Museum in Chicago had two beautiful dresses, one collected by M. Miller from the Yakima Reservation, and the other was collected from the Klamath Lakes Agency by G. Dorsey and the collections of the Smithsonian's National Museum of American History. As will be shown, the coins that were imported as part of this exchange system exhibit a different profile of characteristics from the coins imported, for other reasons, by later Chinese immigrants.

**Figure 4.16.** Portrait of a Wishram bride. Photo by Edward Curtis, ca. 1910.

Ethnographic collections demonstrate that the coins were used to decorate clothing and other items of personal adornment by peoples as far south as the Columbia Plateau, although it is possible that they did not put as high a value on the metallic content itself as their northern neighbors did.

The Chinese wen and some examples of Chinese charms of the same shape have been recovered from both burial and occupation sites of the post-European contact period. It is possible that some of the coins that were introduced to North America may still be recycled as decorations on special items of clothing or items of ritual importance today.

Several small metallic items were traded to Native Americans across North America and used by women to trim clothing in a way that was both beautiful to look at and to hear. Small cones made of tin and even thimbles were used as fringes that made a pleasant sound when the wearer walked, as was described for Taglas Cania. Silver dimes and half-dimes were also popular for the same reasons; they were pretty to look at, pleasant to listen to, and demonstrated status derived from connections with powerful people. There is a beautiful set of Yakima bridal jewelry in the Seattle Burke Museum, and several portraits of Wishram women wearing headdresses trimmed with wen were staged and taken by Edward Curtis. Although Curtis is known to have emphasized beauty and the stereotypical desired effects over accuracy in his work, there is no doubt that his photos feature genuine regalia, if not pieces that would have been worn together by Curtis's subjects.

## *The Uses of Wen and Other Asian Coins by the Overseas Chinese*

Several trade networks and methods of importing Asian coins were associated with the arrival of significant numbers of Chinese workers from Guangdong Province beginning in the middle of

the nineteenth century. Some of the coins were imported for resale or personal use in the shops serving overseas Chinese communities. Some coins came in packages received through the mail directly from China and sent on the same ships as the special foods, clothing, medicines, and other traditional supplies that made life more bearable for Chinese men living away from home. Coins were carried from the stores where they were purchased and from packages in the mail or as personal property, into game rooms and labor camps, just about any place where overseas Chinese gathered for work or recreation. The path of the movement of some of the coins can be traced along the railroads where they were dropped and lost along the way as the railroad workers moved from camp to camp (Akin, Bard, and Weisz 2015).

Any listing and description of the known uses, and speculations on other possible uses, should begin with the well-established talismanic, gambling, decorative, and medicinal uses for these coins and should probably include their use as hardware. A brief review of some of these uses will support the argument that, although the coins were used for many things, their use as circulating currency was not among them. In every case the value of a wen, dong, or mon for any of the uses described here greatly exceeded their nominal nineteenth-century North American market value of about one-tenth of a cent.

## *Talismans*

It isn't always easy to determine when an item was used for a talismanic purpose. However, in the culture of nineteenth-century Chinese immigrants there are a number of items related to both traditional folk religion and more formal Taoist religious practices that were clearly believed to be effective for dealing with the supernatural world. Talismanic charms came in many forms. Sometimes several special coins were strung together to produce a poem or special message, or they may have been formed into magical swords for deflecting ghosts—to mention just a few. Large numbers of coins were imported by merchants or brought over by individuals, often as part of ritual objects and used for a variety of talismanic and religious purposes.

The magical power of coin charms was attributed to two major sources. First, the written name of the monarch was believed to contain the power of the monarch himself, so coins of the powerful or learned emperors were often sought. The preference for coins of the older emperors, especially the coins of the Song dynasty (960–1279), for charms may also be seen as drawing power from the "powerful time of the beginning" evoking the power of a mythical past. The more recent Emperor Kāngxī (1662–1722), whose long reign was considered to have been a particularly auspicious time for China, certainly falls into this category, and his coins were particularly favored for talismanic use.

A second source of power for talismanic charms helps explain their popularity with itinerant laborers. According to Taoist belief, charms are permanently inhabited by spirits. People thought that they were able to communicate directly with spirits through the use of talismans without the intervention of a medium, the talisman itself acting as the medium. This belief must have been comforting to men working in isolated communities and labor camps where they had little connection with home or any formal religious practice or full-time priests.

A common talismanic device of the time that remains popular and in some use today is the coin sword. These swords consisted of a series of wen tightly strung together in the shape of a traditional combat sword. The swords examined by the authors have ranged in size and complexity but are usually from approximately 35 to 50 cm in length. They can incorporate coins that are older and more imbued with spiritual power, or made with more recent or machine-struck coins. Smaller and plainer swords are composed of a minimum of around fifty coins, but the older, larger, more elaborately decorated examples can incorporate over 150 coins in the main body of the sword and the suspended decorative dangles. Fake or replica wen are sometimes preferred for modern replicas or souvenirs sold in Chinatowns because their size and patinas produce "prettier" final products.

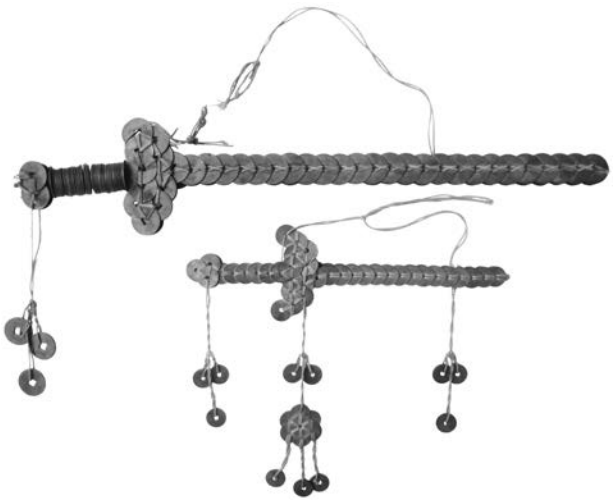

**Figure 4.17.** Coin Swords are Chinese ritual objects used for keeping ghosts away.

The primary uses for coin swords were related to the need to manage spirits. A *San Francisco Chronicle* article from 1878 presents the Anglo reporter's understanding of how the Chinese may have used the swords to deal with ghosts, or *fiends* as they are referred to. "The fiends are also very much afraid of a sword made out of two iron rods, some ancient or modern coins and red cords, the coins being tied to the rods with the red cords. This formidable weapon is suspended outside of a bridal bed-curtain, or on the inside of the curtain, if the bed contains a sick woman" (Bancroft Scraps, Chinese Clippings n.d.:8:940).

The swords may have had other uses as well. A Taoist monk, who trained at the White Cloud Monastery near Beijing and lived in San Diego, California, in 1990, reported that the coin swords have been used to substitute for the traditional Taoist sandalwood swords, which are used to ward off ghosts and spirits, since the sandalwood swords are difficult to obtain outside of China (Share K. Lew, personal communication, 1990). Among other uses, coin swords were given to newly married couples to hang over the marriage bed to insure bliss and harmony (Armentrout-Ma 1984:2). This practice is probably related to the one reported in 1878. During visits to San Francisco in the 1990s, two of the authors were told by shopkeepers that such swords were used to keep all kinds of evil out of shops, including thieves, and several were observed suspended over cash registers or seen pointing at the entryway of a store.

**Figure 4.18.** Coins on a red string.

Other forms of protective charms, consisting of several wen tied together with red string, were carried by many Chinese people or were kept in the home or place of business. Similar groups of coins have been recovered from archaeological sites in Lovelock, Nevada (Hattori 1979:414); Tucson, Arizona (Olsen 1983:53); and Riverside, California (Akin and Akin 1987:427). Variations of the string-of-coins charms may have been used in rituals to mark changes in personal status. Groups of nine coins tied with red string were given as parting gifts to relatives leaving China for California. Groups of older coins were tied to keys or other small important objects that were carried on the person, both as a charm to attract prosperity and as reminders of home (Akin 1992:140).

Some individual coin-like artifacts served as charms, comparable to lucky pieces used in many countries. Schjöth (1929) illustrated over 120 such charms and amulets in his classic work on Chinese coins, and hundreds of other distinct types are known. They have been produced for more than two thousand years, and the latest versions will be found for sale in shops in every Chinatown. A few bear dates, but those with reign names were often produced well after the stated reign, and dating of most of them is done by analysis of design elements, style, and production techniques.

**Figure 4.19.** The simpler charm was produced in the nineteenth century, with the inscriptions of a Zhou Yuan coin some 900 years earlier. An (unidentified) animal is above the hole on the reverse. The more complex charm, with an ancient trigram design on the obverse and calendrical animals on the reverse, was struck around 2000 CE. It was produced by modern minting methods, and may be found in several sizes.

## Funerary

A number of Euro-American observers have reported the use of Chinese coins at funerals they attended in nineteenth-century California. The earliest known report comes from 1849, shortly after the arrival of the first Chinese immigrants. Recorded in a handwritten notation in the Bancroft Scraps, this note probably records a funeral observed in San Francisco. It read: "Then there were pyramids of apples and pears and oranges and grapes mixed with leaves and flowers; another raw pig associated with a roasted one on a smaller table; two plates of bogus silver coin; a bottle of something that looked like whiskey" (Bancroft Scraps, Chinese Clippings n.d.: 9:136).

The second example, from the *San Francisco Bulletin* of July 10, 1877, describes a slightly different use of coins during a funeral march from the city to the outlying cemetery. It reads "two of the Chinese bands were playing their funeral marches, while a man scattered among the crowd, which packed the street from Washington to Jackson, small coins that were done up in tinted paper" (Bancroft Scraps, Chinese Clippings n.d.).

At the time of this funeral the only "small coins" from China were the wen, as the occasion predated the introduction of small struck coins in China (Krause 1985:335). It seems unlikely that US coins would have been used on such an occasion.

The persistence of the inclusion of these coins in important community activities was illustrated by a ceremony at a book-signing party near Stockton, California, in 1987 celebrating the publication of the book *Sam Fow*. There were offering plates bearing oranges and red coin envelopes containing wen at the ceremony (Debbie Mastel, personal communication, 1988). A similar practice was adopted by the Riverside Save Our Chinatown Committee (in California) who began using real wen in their New Year banquet red envelopes in 2009. In that case the use of genuine coins provided a keepsake that was also a demonstration of the importance of the past, specifically the history of local Chinese pioneers.

## Games and Gambling

The use of Chinese wen and Vietnamese dong in gambling has long been noted by historians and archaeologists, and is another major reason why Asian coins were imported and used in North America. The imported coins were not used as money for the payment of bets, even within overseas Chinese communities, but were used in the games as game pieces similar to the use of dominos or checkers, or sometimes they played a role similar to that of poker chips in card games. A number of different games were played, but the most popular, and perhaps the best known, is *fan tan*. Evidence of gambling on fan tan, as well as other games, such as dominoes, has been found in just about every overseas Chinese community of any size, as well as in nearby labor camps, including those of other ethnicities.

Gaming and gambling have been widely accepted in Chinese culture and did not carry the same kind of stigma that gambling did in many Euro-American communities. There weren't many leisure activities for men who were living away from home, especially for those who were isolated in remote work camps, such as the camps of railroad workers. The gambling equipment was simple, portable, and easily hidden from authorities. Over time as the communities grew, more formal gaming parlors were established and greeted with varying degrees of hostility by the larger Euro-American community. The owners of gaming establishments would order the necessary equipment through

the same sources from which they purchased medicines and favorite traditional Chinese foods, and through which they received mail and newspapers from home. Gary Weisz, an avocational historian of the Northern Pacific Rail Road, believes that gambling was permitted by supervisors at many of the railroad's work camps. In downtown San Bernardino, California, where the remains of the former Chinatown were excavated, the largest number of Asian coins recovered from a single site in North America provided evidence of the use of both wen and dong in gambling. Gambling was ubiquitous, to say the least, in the places where Chinese workers were to be found in the nineteenth and early twentieth centuries.


**Figure 4.20.** Illustration from 1879 of Chinese gamblers playing Fan T'an. The details indicate that the Chinese wen were being used as game pieces (like checkers, dominos, or go game pieces), and the bets were all paid in circulating currency.

Stuart Culin was an early ethnographer who conducted careful and extensive ethnographic studies of games around the world, and his descriptions of games are considered to be the most accurate of the time. Details were important to Culin who was making comparative studies in an effort to understand the relationships between peoples and their cultural practices, in part by studying how games were played. He wrote an excellent description of the use of wen in the game of fan tan in 1891 that has been widely reprinted. He used the term *cash* for the wen, as was the convention at the time, but he clearly describes the role of the various coins and game pieces in fan tan:

> *Fan t'an* is a game usually played upon a mat-covered table, with a quantity of Chinese coins or other small objects which are covered with a cup. The players guess what remainder will be left when the pile is divided by four, and bet upon the result. The name means 'repeatedly spreading out,' and refers to the manner in which coins or other objects are spread out upon the table. . . .
>
> The *t'an kun* ['ruler of the spreading out'] takes a handful of bright brass 'cash' from a pile before him and covers them with a shallow brass cup about three and one-half inches in diameter, called the *t'an k'oi* or 'spreading out cover.' The players lay their wagers on or beside the numbers they select on the plate, and the *t'an kun* raises the cover and carefully counts off the 'cash' in fours, one at a time, not touching them with his hands, but using a tapering rod of black wood about eighteen inches in length, called the *t'an pong*, or 'spreading out rod,' for the purpose.
>
> If there is a remainder of one, after he has removed as many fours as possible, 'one' is said to 'opened'; if two or three remain, 'two' or 'three' is 'opened,' or if the pile has contained an even number of fours and there is no remainder, the 'four' is 'opened.' The operation is conducted in silence, and when the result is apparent, the *t'an kun* mechanically replaces the separated 'cash' into the large pile and takes another handful from it, which he covers as before. (Culin 1891, italics original)

Another description of fan tan, referred to below as *than*, in an 1858 *San Francisco Bulletin* article, reports that the game was "played with Chinese cash, or brass coin, of which it takes in China one thousand to make a dollar. The pieces, however, are used, not as money, but as dice or counters" (Bancroft Scraps, Chinese Clippings n.d.:9:entry 1474).

Apparently the operators of the gambling houses were sometimes forced to change the games they offered in an attempt to circumvent Anglo law. The following article, describing a game called *sick*, appeared in the *San Francisco Bulletin* of December 18, 1858: "Chief Burke last evening arrested two Chinamen named Ah Long and Ah Sam for playing the gambling game of *sick*. It has been rare for the Chinese here to play any other game than *than* [fan tan], or odd and even; but sometimes they play *sick*, and particularly it seems, since the late prosecutions against gambling were commenced."

The dominant Euro-American establishment exhibited varying degrees of tolerance for gambling at different times. Most of the time, however, it was considered illegal. The amount of prosecution and its severity would depend on the general moral climate of the community and the degree of corruption in the police force. The fact that these activities were often forced "underground" to some degree has had an effect on the archaeological record. The equipment used in gambling was often hidden in privies and has been recovered from one in Tucson's Chinatown among other places (Olsen 1983). Evidence of the activity has been recovered from ceramic containers that were recovered from the edges of buildings, suggesting that it had been hidden away from curious eyes but still kept where it could be quickly reached when the time was right—unlike hoards that were buried in more remote locations because they were accessed much less frequently. An account from the *San Francisco Bulletin* of 1876 reports the use of Asian coins in association with the game of dominoes:

"Since the effectual raids made by the police upon the games of *fan tan*, and the severe penalties imposed upon all who are arrested for playing it, that game has been generally abandoned. The game that is now universally played is 'dominoes.'" Instead of playing the game as whites do, the Chinese mix the dominoes well together. Two dice are thrown for Choice. The man getting the highest number of spots on the dice draws the first six dominoes. The second best throw takes second choice, and

so on. The game is generally played with four persons. The first choice then plays the first domino; whoever matches it wins it and plays another domino. At the end of each game, some Chinese coins are given out to indicate the amount of the winnings. The coins represent a certain amount in American money, like poker chips. All bets are settled outside the club room.

The use of coins in the dominoes game just described is most similar to the use of poker chips during card games, as counters representing the bets. In each of these games it is important to note that the Chinese coins were used only as game pieces, as in fan tan, or counters, and the betting was conducted in other forms of currency. This fact comes across quite clearly in the contemporary reports of the games.

Culin gave a description of the coins that were imported as game pieces.

> The coins used in playing *fan t'an* are those of the present dynasty, such as are now current in China and imported expressly for gambling purposes in large quantities. Only perfect pieces, and preferably those of the same mintage, are selected, and these are cleaned with vinegar and afterward polished by being shaken with damp sawdust in a cotton bag. Those of the Kanghi [Kāngxī] period (1661 to 1722), and those of the Kienlung [Qianlong] period (1735 to 1796), which constitute a large part of the present circulation in China, are generally used, but pieces representing all of the Manchu dynasty, except the present ruler, may be found upon the strings of cash, and a collection embracing the issues of many of the provincial mints can be formed from them without much difficulty. (Culin 1891:4–5)

Smaller, thicker coins of fairly uniform size seem to have been preferred in gambling. Older Chinese Americans, who have childhood memories of seeing the games played, and hearing them discussed, report that the thicker, sturdier coins of Qianlong were preferred because they lasted longer (Ping Lee, personal communication, 1989).

These reports correspond with both ethnographic and archaeological collections of gaming pieces. Therefore, a large percentage, sometimes in excess of 60 percent, of the Chinese component of a gaming assemblage, will be from the reign of Qianlong (1736–95) with the Jiāqìng reign (1796–1820) next-most common. Products of most mints will be found, with a preponderance of the common and consistently well-made products of the two Beijing mints.

In addition to the wen, the Vietnamese dong is also associated with this activity. The darker and duller color of oxidized zinc made these coins clearly distinguishable from wen, especially if the wen were polished. The two varieties of coins were sometimes used as different game pieces and counters when a difference in color was required. Culin (1891:6) described their use: "the brass cash [wen] are not used as counters upon the board, leaden pieces from Annam [Vietnam], called *nai ts'in*, 'dirt cash,' being substituted to prevent confusion."

The assemblages of gaming coins containing Vietnamese dong would have been imported for a period of only about fifteen years beginning around 1880. New supplies consisting entirely of Chinese coins were imported during the mid-1890s, as Vietnamese coins dropped out of use in Guangdong. As a result, Vietnamese dong fell out of use in the American West as well.

The gaming kits used for fan tan were quite large. Historic accounts report the use of large handfuls on the gaming tables, and a 1911 ethnographic sample, packaged as a set, had 280 coins (see Figure 4.21). Assemblages from this system can be quite large if the coins were abandoned, or were in a building that was destroyed. If the coins were part of a gradual loss, such as falling through the floorboards of a building during the course of a game for example, the find may be only a few coins. In fact this is a common way for the evidence of this use to be documented in the archaeological record.

The policy of periodically raiding gambling establishments in urban centers, at least at times when it may have been economically or politically expedient, went on for decades. An early report states that "to effect a capture of these Celestials is no small feat, owing to the cunning which they exercise to circumvent and outwit the officers. The most unapproachable and out-of-the-way places are selected to hold lottery drawings and to indulge in 'tan,' while at all of the games heavy wooden or iron doors, sometimes three or four to an entrance, resist all efforts in effecting admission" (*San Francisco Chronicle*, October 13, 1880).

The structural feature described in these reports may be observable in some urban archaeological sites. In more rural settings, where the law was not omnipresent, or areas where the games were not permanent businesses, rest areas and workers' living and dining areas are locations where coins as gaming evidence can be expected to be found. As long as the games were illegal, even if only sporadically raided, participants would have sought secure hiding places for the gaming paraphernalia, including the Asian coins, between games. Privies and buried caches are both likely places to find hidden gaming pieces.

Cooperation between researchers is a valuable resource, and the generosity of an archaeologist working in British Columbia provides us with a rare window into the time and the activity. In the course of his investigations of the uses of Chinese coins in Canada, Grant Keddie obtained a sealed group of coins imported for use in fan tan in 1911. He described them and allowed Margie Akin to photograph the package. Keddie said,

> the coin packages are now extremely rare and have never been described in print [as of 1988]. In 1981 I obtained an unopened package of coins that were known to have been purchased in Victoria in 1911 by a Mr. Lowe of Vancouver. Mr. Lowe remembered obtaining the coins in 1911 because he did so at the same time that he was required by law to have his photograph taken.
>
> The package is 11.5 × 6 cm. and has an outer covering of thin off-white paper. The front shows a red ink stamp mark of a man waving a flag (possibly representing the revolution of 1911). There are three Chinese characters on the flag that name the store selling the coins. The literal translation in Cantonese is *Cheung Sung Mai* or 'Lucky, Live, Beautiful.' There are four characters under the man waving the flag that could be interpreted as 'this is a package of good coins.' Along the side of the package is a row of five characters that translate approximately as 'there are 280 pieces in 1 package or 1 whole set.'
>
> Opening the package revealed a second paper wrapping tied with a small piece of red string. Inside this was a third paper wrapping with a blue oval ink stamp. Inside the edge of the top of the oval are ten characters giving the address of the store: '49 Sweet Water Street.' At the inside of the oval are the English words 'LEE KUN KEE MAKE'. An inner oval has five large characters: 'Canton' and below this the person

who owns the store 'LEE' followed by the name of the store 'KUN KEE.'

"Inside this third wrapper is a black cloth bag with a white pull string containing four bundles of coins. Each bundle consists of two rows of thirty-five coins tied together with string. The 280 are all from the Ch'ien Lung [Qianlong] period (1736–96). [Keddie's later analysis revealed that three of the coins were actually from the reign of Jiāqìng (1796–1820)]. Four different mint marks are present—Ch'uan, Ch'uan, Chih, and Chin—on 202, 72, 5, and 1 respectively. The coins are uncirculated and do not appear to be reproductions." (Keddie MS:1)

In fact, the coins were not uncirculated, but were in very good to extremely fine condition in numismatic parlance.

**Figure 4.21.** A group of coins known to have been imported into Victoria, British Columbia, in 1911 for use in gambling. Photo courtesy of Grant Keddie.

This sample, collected in Canada, provides a good control for the late end of this activity. Vietnamese coins were, by 1911, no longer in use for fan tan. The function they had served was replaced by some other form of counter, possibly the black and white round glass beads known as *chu*, associated with various games. The existence of this sample gives further evidence that the coins imported were a reflection of two forces controlling the characteristics of the assemblages; the supply of coins circulating at the source in China, and a preference and selection for thick, uniform coins when they were available.

Nongambling games were also played by Chinese people in the New World, and some of them featured coins as markers or counters. Children used wen as markers in a variety of hopscotch in San Francisco as late as 1935 (Philip Choy, personal communication, 1986).

## Decoration

The use of Chinese coins to decorate items of clothing and personal belongings predates the arrival of any Chinese people themselves and was associated with the fur trade. Those coins, Chinese wen, were imported as coins that were not, as far as we can determine at this time, attached to anything else; although it is possible that they arrived in the traditional strings. After they arrived, the coins were attached to items of clothing and were sometimes used as an embellishment for masks. There are ethnographic collections of clothing from the time around the fur trade and a little later that included the coins, as described earlier in this chapter.

Later, when Chinese import goods began to reach the international markets through shipping, coins were added as an adornment to the imported everyday household items such as sewing baskets. These baskets were very common and were sold to Euro-Americans who may have had little or no direct contact with Chinese merchants. They were sent in wholesale lots to import/export merchants who in turn sold them to retail shops. The sewing baskets were so common that almost every historic restoration of a late Victorian period sitting room includes one; they were an expected part of the furnishing of any home. One of the authors reports that her great-grandmother bought Chinese sewing baskets for her daughters during the mid-1920s, when they all lived in Brooklyn, New York. The sewing baskets, constructed of split bamboo, were popular among young women and were very widely distributed. The authors' personal examination of over fifty examples, collected from British Columbia to Southern California, indicates that the baskets were produced, and probably imported, for several decades. The wen are added to the decorations on the top of the basket that usually include glass beads, red silk tassels, and in the fancier baskets, glass circles in imitation of traditionally highly regarded jade circles.

**Figure 4.22.** An example of the very common Chinese sewing baskets decorated with coins on the lid. The decorations were made and attached to the baskets in China. If there was any symbolism to the arrangement of shapes, colors, and characters it held no meaning for Euro-American customers.

Grant Keddie believes that the arrangement of the beads, glass circles, tassels, and wen may have specific talismanic associations, some of which are represented by the spatial arrangements of the decorations, while others are represented by the color combinations (Grant Keddie, personal communication, 1991). The baskets, however, were produced primarily for sale to the non-Chinese community, and the purchasers were probably

unaware of any symbolism encompassed in the arrangement of the coins and colored beads. As the baskets came into the possession of non-Chinese owners, much, if not all, of the symbolic meaning must have been lost.

Other personal items, such as key chains, were decorated with wen and carried by Chinese workers, probably for their talismanic or sentimental value, like the one shown here that was used by a Chinese worker in California's gold country and became the property of the doctor who treated him during his last illness. Another, with many more wen, was found in an old, decomposing barn in Rhode Island around 1987. It may be impossible to separate the purely decorative uses of the coins from sentimental or talismanic uses when wen were used by overseas Chinese. No doubt there was considerable overlap.

**Figure 4.23.** Key chain used in the California Gold Country, with Chinese wen attached as good luck pieces.

## Medical

No direct evidence for the use of wen as medicine has yet been recognized as coming from an archaeological context in North America, although we are confident that some of these practices occurred in overseas Chinese communities. The use of coins in traditional medical treatments in China is very well documented. The fact that contemporary Chinese Americans, and ethnic Chinese Vietnamese Americans, still engage in some of these practices lead us to think that some of them were current among early Chinese settlers.

The two main medical practices requiring coins are coin rubbing and the preparation of medicinal teas. Coin rubbing is practiced by ethnic Chinese and other people in many parts of Southeast Asia. There are many names for this widely used practice, among them are *Juasha* in China, *Cao Gio* in Vietnam, *Koo' Kchall* in Cambodia, *Kuong* in Laos, and *Karok* in Indonesia. The persistence of this practice has been noted by physicians and social workers, including the first President and CEO of the California Endowment, Robert K. Ross, MD. Dr. Ross often told people that the misdiagnosis of coin rubbing as a case of child abuse and subsequent arrest of the parents, all because of a lack of understanding of the practice, is what caused him to become a champion of cultural competence in medicine. The practice is still common among many ethnically Chinese people of many countries, and has been reported to the authors by current practitioners.

In traditional Chinese medical practice coin rubbing is a treatment for "hot" diseases and is related to the more familiar cupping and acupuncture (Walterspiel, Rogers, and Kemp 1987:309; Roberts 1988). It is not, however, usually a treatment provided by a Chinese physician, but is most commonly used as a method of providing symptomatic relief by family members for each other. It may also be related to a form of "animal massage," a method of scratching oneself with a fingernail. This is another folk practice designed to remove the top layer of dead skin, thereby aiding the kidney in the elimination of wastes and stimulating capillary circulation (William Bowen, personal communication, 1992).


**Figure 4.24.** A large wen of the reign of Kang Xi (1662–1722) with a diameter of 27 mm would have been perfect for coin rubbing. The fancy handle and 28-mm coin substitute from Thailand, purchased at a Chinese shop in San Diego in 1990, shows how someone without a strong grip could use a coin in this process. The vial of rubbing oil was available at the same San Diego shop.

There are many variations on the treatment but basically the practice consists of a systematic massage that begins at the top of the shoulder blades and moves down the back in a curve along the underside of the shoulder blades. The same movement is done a little farther down the back, repeated again a little farther down, and so on. Each massage stroke may be repeated in the same location twice, or the entire pattern may be repeated. Variations include adding additional strokes at acupuncture points to the treatment. The coin is held at about a 30-degree angle from the body, and a soothing lotion is applied along with the massaging. Either White Flower or a similar oil with a menthol base is used in this practice. It is possible that if coins of the correct size are archaeologically recovered in direct association with massage oil bottles in an archaeological context, we may have evidence of this practice, but if it has been reported to date, we are unaware of it. A bigger coin was preferred because it provided a better gripping surface, and the largest older wen are the perfect size. In the United States there are currently no coins with smooth edges

big enough to serve the purpose, and the use of a coin with a milled edge for coin rubbing will produce small abrasions on the skin and has been known to result in the arrest of parents for child abuse (Walterspiel, Rogers, and Kemp 1987).

Maxine Hong Kingston, contemporary Chinese American author, presented a fictionalized account of Chinese agricultural workers in Hawai'i in her book *China Men*. Based on stories she had heard from her elders, she described what may well have been an almost daily routine for Chinese laborers stranded far from home. "At the very end of the day, the men exchanged remedies. They scraped one another's backs with spoons to get rid of rheumatism and arthritis. For heat sickness they scraped necks with the edge of a coin cooled in water, the square hole in the middle of the coin giving a good grip. They slapped the insides of one another's elbows and knees, where tiredness collects" (Kingston 1980:99). While the account appeared in fiction, it is historically based and accurate. It is easy to see how the description of men trying to ease their pain with their own self-treatments could apply to any labor camp.

A related practice may not leave any identifiable traces in the archaeological record, but should be recognized as a quasi medical treatment incorporating coins and derived from shamanistic practices. A description of this practice was provided to the authors by a Chinese immigrant to Vancouver at her home near the campus of the University of British Columbia. Mrs. Luisita Eng was born in mainland China, lived in the vicinity of Beijing as a child, and went to Canada as an adult. She is from a well-educated and relatively prosperous family. She described a treatment incorporating the use of a coin that was used on her as a child. Because the procedure requires the use of a silver coin it would have been restricted to the more well-off portions of a Chinese community. Foreign silver coins circulated in China during the early 1800s, but beginning in 1889, large numbers of machine-struck Chinese silver coins entered circulation. In North America, local silver coins would have been used for such a treatment.

Mrs. Eng reported that when she was ill her mother would gather together a silver coin, a freshly cooked hard-boiled egg, and a white handkerchief. First her mother would show her a bright, shiny coin. Then she would insert the coin into the egg and wrap the egg in the handkerchief. The package would be warm and soft, and was then used to massage her chest, back, and forehead. When the massage was completed, the egg was cut open and the coin removed. The effect of the sulfur from the egg on the silver would have turned the coin black, but the young Luisita was told by her mother that the "spirit of the cold" had been transferred from her body to the coin, and the proof was that the coin had turned black. Mrs. Eng reported that the process was physically soothing and psychologically comforting (Luisita Eng, personal communication, 1991). This appears be a variation of a very old technique derived from shamanistic practices.

The final group of medical treatments that involve the use of Asian coins, especially older brass wen with a high zinc content and Vietnamese dong, may have left archaeological evidence, but once again, we are still looking for it. In China, several medicinal teas incorporate coins as ingredients. Brass coins were thoroughly washed and boiled in water to produce a "tea" that was consumed by the patient. The preparation of teas is a very common method of ingesting medicine in both formal Chinese medicine and home remedies.

Most of the preparations involve boiling a coin containing zinc in a tea. The zinc in the coin, which had been leached into the slightly acidic liquid, was expected to promote healing and enhance the immune system, effects that are now firmly established in Western medicine as well. Coin teas were used to treat internal and external problems. Anyone who has experienced the benefits of zinc lozenges for sore throats and zinc lotions for diaper and heat rashes understands that such treatments can be effective. The Vietnamese coins, with the highest levels of zinc, were ground up, and the powder was mixed into an aqueous solution or ointment for topical use for eyes, ears, and hemorrhoids (Ching 1987:24). It does not seem unreasonable to suggest that the Chinese laborers, who had to rely on self-treatment for most medical problems, would have kept a few coins around for such purposes whether they understood why the method worked or if they were just following grandma's "recipe." Will any of these uses be found in an archaeological context that will provide a firm finding of medical uses? We hope so, but they are much likelier to be found when researchers are able to make appropriate interpretations.

### *Hardware*

The use of wen as hardware was reported from Texas. An iron hinge that used two "Chinese 'cash' coins" for washers is reported to have been recovered from the Chinese railroad labor camp at Langtry, Texas, a site occupied in 1882 (Briggs 1974:93).

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# Tokens and Medals


Tokens and medals look somewhat like coins but almost always lack legal tender status. Many tokens were an important part of the circulating currency in a limited area. In contrast, medals generally did not circulate at all, except in times when coins disappeared from circulation, and medals of an appropriate size and alloy passed as substitutes for the corresponding coins. Many (but certainly not all) of the kinds of tokens that have been used in North America are mentioned here and are classified by function rather than by form. For each illustration in this chapter, there are many hundreds, or even thousands, that are not illustrated.

A reference collection of over 200,000 different North American tokens would still lack most of those produced and issued. Medals do not exist in such great numbers, but their types certainly number in the tens of thousands. Fairly comprehensive references exist on particular kinds of tokens and medals, usually covering a narrow range of types used within a single state over a defined period of time, or sometimes a very tightly defined kind of token if the work is nationwide in scope. Many of these references have been produced by members of the Token and Medal Society (TAMS), the American ***Vecturist*** Association, and other local and national organizations. But even so, most varieties of tokens and medals are not yet listed in any publication. This situation is not as bad as it sounds, as the tokens and medals most likely to be found archaeologically are usually relatively common, and almost all the common ones are listed in some reference.

The identification situation has improved over the last three years and can be expected to improve still farther very soon because a growing group of token experts has been building a large token reference on the Internet. Their eventual goal is to list and illustrate every token ever issued, though the work will take years and never be completed entirely. But even the early stages of their work, which involves the creation of a database of all the tokens mentioned in published material, can be very helpful.

Despite the lack of complete coverage in the token references, almost all tokens can be identified to some degree, and information can be extracted from them by the archaeologist. Each had a definite production date before which it could not have been deposited in the archaeological record, and each represents particular human behavior in which the token figured.

Whether the date is identifiable to a particular year or placed within a longer time period based on research, this information can be helpful in sites' analyses. Some tokens and medals can be dated to specific months or even days. As with coins, each token or medal was used within specific human ***behavioral systems***, and information such as the context and condition in which it was found can help in analysis of its place in the human behavior that preceded its deposition.

The purpose of a token can usually be determined, and that can help considerably in understanding how that token fit into the activities and ideas of those who lived and worked at the site in the past. Some tokens changed functions at some time in their use-lives, and knowing the possible functions increases the power of the token to shed light on the past.

## A Few Words of Caution

While these points are made elsewhere in this book, they need to be emphasized in regard to tokens and medals. Tokens, like coins, are innocent pieces of metal created by humans and acted upon by humans and by natural forces. They do not have agency, they do nothing whatsoever by themselves. The study of tokens and medals, whether they are found in archaeological sites or not, is a study of human actions, human attitudes, human relations with nature, and certain complexities of human societies. Sometimes humans fool other humans, others cheat and steal, and some human actions may be motivated by malicious impulses that are hard for some scholars to grasp. So never assume that everything is as it appears on the face of it. Some tokens and medals are copies of others, and some are designed to fool recipients, whether they are contemporary counterfeits or later fakes made to defraud collectors and confound scholars. Some charlatans are principally motivated by profit. They make fake relics and sometimes plant them at archaeological sites to provide a false impression of legitimacy. Others attempt to fool scholars for reasons of malice. This is nothing new—false reports of coin finds come

from fourteenth-century China and seventeenth-century Britain, as well as twenty-first-century Arizona.

Another important aspect of malicious activity that may harm archaeologists is artifact theft. Visitors or site staff may pocket artifacts that they believe have a substantial market value; and a very few of these artifacts *do* have a considerable market value. For example, while a California merchant's token from around 1920 may have little value, a similar token from a few miles east in Arizona may sell for dozens of dollars due to the vagaries of the numismatic market. A few rare tokens (unlikely to be found in archaeological contexts!) sell in auctions at prices well over one thousand dollars. Such prices are irrelevant to the common, corroded coins and medals that make up the overwhelming majority of archaeological finds, but they put stars in the eyes of treasure hunters and thieves. Sites must be secured, and artifacts must be accounted for carefully and secured as though each little aluminum token were a piece of gold. And local public release of information should be carefully managed. Most tokens, medals, and coins found at archaeological sites have little value, but many people refuse to believe this, and coins and tokens with a collector value of less than ten cents have been looted and will be stolen from archaeological sites that are not properly secured.

## Why do we Show Recent, as well as Older Tokens?

Older tokens and medals are emphasized in this list because they are more likely to turn up in an archeological context, but a few newer items are included to make particular points. We do not exclude all newer material for two reasons. First, at an archaeological site, surface and near-surface finds cannot be ignored. Old material may appear on the surface and is often mixed with newer artifacts, some of which may have been dropped by the excavators themselves. Archaeologists are all familiar with the recent dimes and nickels that are found at much older sites. At some sites they are quite properly recorded, but at some sites they have been ignored. Coins bear dates. Most tokens do not. A token with a very modern appearance may date to 1950, or even 1930, and may reflect activity at the site well within the range of interest of a historical archaeologist. An old-looking token may date to 2004, but this date will only be determined by analysis. At many sites, it is necessary to assess later intrusions and modifications, some quite recent, and coins and tokens may provide needed evidence.

The second reason for including more recent material is that this chapter is intended to show how tokens fit into specific human behavioral systems, and recent examples may be as useful as older ones in understanding these behavioral systems. The intention is to show how the uses of tokens and medals have changed over time, and time did not stop at a particular date in the past.

## The Earliest Imported European Tokens

The very earliest European settlers in North America brought small numbers of coins and tokens with them. In England, there were no official government-issued, base metal, low-denomination coins until 1613, and small tokens of copper alloys, tin, lead, and other metals served in their stead. Some were issued by merchants and trading houses, some by religious organizations (that had provided '"pilgrims' tokens" for centuries), and quite a few by taverns. The lead or pewter piece with a six-foil design on one side and a twelve-foil design on the other is an English pilgrims' token from about 1350 to 1425; it is one of the predecessors of the small tokens that later came to America. Earlier versions of these tokens were originally worn on the outer clothing of religious pilgrims to show the various shrines they had visited or to carry with them some of the blessings of a holy place. By the 1200s they were commonly used as small change, and particular varieties might entitle a pilgrim to a meal or to a night's lodging.

**Figure 5.1.** English '"pilgrims' token," 16 mm.

Tokens from the European mainland also circulated in cash-poor England, including the ***jetons*** that were formally tolerated as aids to accountancy but often circulated as half-farthings, farthings, and halfpence when they were not being used as gaming tokens signifying much larger sums in games of cards or dice. The jetons with a central circle of crowns and fleurs-de-lis bear the name of Hans Krauwinckel, Jr., of Nuremberg, Bavaria, who became a master of his craft in 1586 and died in 1635. His factory produced more jetons than any other of the period. These pieces were so common that over five hundred Nuremberg jetons have been found in seventeenth-century contexts at Jamestown, by far the most common numismatic artifact type from the settlement. They have also turned up in excavations farther north, from Maryland to Massachusetts.

**Figure 5.2.** Nuremburg jetons, 25 mm, 21 mm.

The people in England who spent and accepted these small tokens often had no idea why or for whom they had originally been struck, whether as bridge tokens, theater admission tickets, beer tokens, or propaganda pieces for several sides in the

religious wars of the period. They were roughly categorized by merchants according to size, weight, and alloy, and accordingly slotted into the English monetary system as quarter-farthings, third-farthings, half-farthings, farthings, or halfpennies. A token given in change as a farthing might be accepted as only a half-farthing by the next merchant, and the value of the currency was as much subject to bargaining as the value of the merchandise. Never assume that because small change was not being produced by the government that it did not circulate. When public needs were not met, private forces met the needs.

Some Irish coins, both unofficial tokens and the regal small-change issues of Elizabeth I, circulated to some extent in England and are found in America as well. Even as England went without regal small change, the Tudor government issued tin and copper coins in Ireland, and copper coins were in use in Stuart Scotland during the same period.

In 1644 the royal British small-denomination coin issues ceased to be minted, and beginning at least in 1648, an astonishing number of different small-change tokens were issued by cities, merchants, taverns, and many other businesses, with more than 13,000 different tokens having been listed so far. But these later tokens, issued until around 1672, are later than the first settlements in Virginia, New England, and Maryland. They did come to America, but only starting in about 1649. A few are shown in Figure 2.4.

Small numbers of such small-change tokens appear everywhere that people from Britain settled. But in some places there is evidence that the leaders of the settlers intentionally provided larger numbers of coins and tokens intended to circulate among settlers or for trade with Native Americans. Evidence that this was the case may include a large number of similar coins or tokens, or particular distributions of them within a site. At Jamestown, the English settlement on the James River near the Virginia coast, founded in 1607, both kinds of evidence are present.

Some coins and tokens that may have been intended by someone in England for trade with Native Americans may not have been accepted in trade. In order to determine what (if any) coins and tokens may have been accepted by Native Americans, numismatic material from Native American sites must be reviewed.

Straube (2014) argued that the numismatic evidence from Jamestown indicates that colonial leaders intended for tokens to serve in an internal monetary system, but upheavals in the operation of the highly stressed colony caused the scheme to be abandoned. Discussions of the nature of exchange systems within Jamestown and its economic relations with its neighbors will continue for some time to come, but Straube's work in organizing the numismatic evidence is very helpful.

While some tokens, as would be expected, were unique or found in very small numbers at Jamestown, some tokens (and some Irish coins) were present in much larger numbers, an indication that the leaders of the colonization effort had something to do with their importation.

## Tokens from England/Europe: 1600s to Early 1700s

The later seventeenth-century tokens came to America quite soon after issuance, but there may have been an increase in exports when the tokens were banned from English circulation in 1672. Excavation of a New Jersey house basement turned up two London tokens dated 1663 and 1668. Other temporally diagnostic artifacts indicated that the house was occupied from about 1670. While only a few letters on the tokens are legible, they were nevertheless identifiable (Thomas and Schiek 1988).

A newspaper reported, in seventeenth-century spelling reproduced here, that English emigrants carried tokens to America. "From Bristol. They write that another Ship is fitting out for Pennsylvania on board which 40 Quakers together with their families will imbarq; and amongst other things tis said they carry with them 300 pounds-worth of Half-pence, and Farthings which in that Colony go currant for twice their value and 'tis added that some discontented Presbyterians will Likewise accompany them" (*The Loyal Impartial Mercury* of London. No. 34, October 1682, quoted in Cook 2006).

Assuming the value to have been split evenly between halfpence and farthings, the three hundred pounds worth would have included 72,000 halfpence and 144,000 farthings. The tokens of the 1648–72 period were readily obtainable in England by the cask. They were of course sold for considerably less than current official regal copper coins, so these tokens are quite likely to be the halfpence and farthings the forty Quakers shipped to Pennsylvania. We know they were in circulation, as a Philadelphia merchant petition fifteen years later complained of the quality of the tokens then still accepted at twice British face value; it asked that the lead and pewter ones be devalued in relation to regal coins. As the newspaper report makes it clear, it was general knowledge that British coins and tokens passed for twice the face value in Pennsylvania, so there surely must have been many more substantial shipments of tokens to Philadelphia.

From 1689 to 1702, William and Mary, and then William III alone, authorized the production of much larger numbers of regal small copper coins than ever before for circulation in Great Britain. In the Netherlands, home to William and a number of his important advisors, production of sufficient supplies of small copper coins was a routine government function. There was a resultant lapse in token production. Under George I (1714–27) and George II (1727–60) a considerable number of farthings and halfpence were minted but were never quite enough. When the minting stopped in 1754, counterfeiters upped their output so much that early in the reign of George III (1760–1820) more than 60 percent of the copper coins in British circulation were counterfeit—and the rest were worn thin. Sporadically intense legal crackdowns on counterfeiters had occasional local effect but did little to reduce counterfeiting. Coinage for Ireland was also inadequate, and counterfeits and tokens circulated there as well.

The button maker Roche of Dublin struck some copper farthings and halfpence in 1760 that had a seditious appearance to the British authorities. On one side they said "Voce Populi," meaning "By the voice of the people," and on the other was "Hibernia," who may be grasping a pike. The portrait did not resemble the just-crowned George III even a little bit. Some thought it looked like a member of the Stuart family, then in exile. These tokens did not circulate well in Ireland. After some years, the majority of them were placed in casks and shipped to America, where the colonists now restive under British authority used them with enthusiasm, and they circulated right on through the American Revolution.

**Figure 5.3.** Voce Populi token of 1760, 26 mm.

## Tokens around the Time of the American Revolution

During the American Revolution, paper money drove almost everything else out of circulation. The coppers discussed above did circulate, but the supplies formerly imported from England were interrupted, and the better coppers were withheld, leaving the most underweight and worn coins and tokens to pass hand to hand, wearing them down even further. Both the states and the Congress issued paper money, though its value fell month by month, then day to day as the war continued. Each side counterfeited the paper money of the other, further decreasing confidence in official money. Private notes were also issued and often preferred when they had any claim at all to legitimacy. Toward the end, the revolutionaries had little to fall back on but zeal—and the good luck of missteps by the British that brought victory at Yorktown to Washington and his French allies.

The "North American Token" was struck in Britain for shipment to North America in furtherance of "Commerce," which is written on the reverse over a ship. While American victory at Yorktown was won in 1781, it was late in the year, and these tokens were probably struck in early 1782, time enough for word of the British defeat to reach London and for dies to be cut. The American revolutionaries did have friends in Britain, and some of them were involved in producing tokens in England to send to the newly independent United States. When a potential profit is involved, one has many friends. Quite a number of other tokens, many showing portraits of George Washington, were struck in Britain and shipped across the Atlantic.

**Figure 5.4.** The "North American" token, 26.5 mm.

During the period from American victory to the implementation of the Constitution in 1789, all the old copper coins, counterfeits, tokens, imitations of tokens, and so on continued to circulate. Several states issued copper coins, most of which were underweight and rather crude. They were produced by contractors, profiteers, experienced counterfeiters, and other gentlemen who were not as concerned about aesthetics as they were about making a quick profit. Of course, some made no profit at all, and a few left the country overnight with what was left of others' funds. However, in several states, particularly Connecticut and New Jersey, the production of coppers more than met demand. Some official state coppers are shown in Figure 3.18.

In fact, copper production was so effective that in the late spring of 1789, the value of most copper coins dropped precipitously. In a few days, most coppers fell to about one-fourth of the value they had at the beginning of the year. They continued to circulate, and in fact they very gradually regained much of their value, as it became clear that the new federal government was not prepared to add much to the money supply. But there was little incentive for anyone who could mint copper into tokens to do so, at least for a few years. For silver coins, always in short supply, the products of the Spanish colonial mints had to suffice. When the US mint started producing coins in 1793, after a few test pieces in 1792, it concentrated on just a few denominations, and until the first years of the nineteenth century only three denominations were produced in more-or-less adequate numbers: the cent, the half-dollar, and the half eagle, a gold piece worth five dollars. The gold was almost all exported, which left in circulation cents and half-dollars and a large number of Spanish colonial coins, together with some light, worn, and doubtful older coins and tokens used particularly outside the port cities.

During the period before sufficient copper cents were available, close to the end of the century, some British tokens again were imported. British tokens of this period are now known as "***Conder tokens***" because they were described in a book by James Conder in 1798. They were struck in massive numbers and thousands of varieties beginning in 1787, and despite a pause when official regal coins were struck late in the century, their production continued into the 1800s. An example is the 1791 halfpenny token from Leeds, with Bishop Blaise on one side and arms including a hung sheep on the other. The inscription around the Bishop, the patron saint of wool workers, says "Success to the Woolen Manufactory."

**Figure 5.5.** Halfpenny token of Leeds, 1791, 30 mm.

The tokens that came to America did so in bits and pieces, with no large importations of particular designs. No one knows just which tokens entered American circulation, because relatively small numbers have been recovered archaeologically. A very worn token from 1795 found in America in 1840 could have been imported shortly after it was made and then found its way into Canada during the Napoleonic wars or into the United States during a later copper coin shortage; there is no way to know which without supporting archaeological context. Only if the token is recovered from a secure archaeological context of the 1790s can it be clear that it was imported soon after it was minted. As yet, there is insufficient data to suggest any generalizations about the import of Conder tokens.

## The Post-Revolutionary Period

The US Mint was unable to keep up with coin needs during the few years before the War of 1812, and as soon as the war began, most of the coins went out of circulation again. The coins that circulated were mainly very worn, and the silver ones were heavily worn Spanish American coins. At the end of the War of 1812, in early 1815, the US government was able to improve distribution and accelerate production of coins. In 1816, some 2.82 million cents were minted, more than in any previous year, and that record was broken in 1817 with 3.95 million. With occasional lower annual mintages, substantial production continued through the 1820s, and the total made from 1818 through 1832 exceeded 30 million in a country with a population of about 13 million. Most of the more than 15 million cents struck before 1816 were also in circulation. Older tokens, counterfeits, and foreign coppers tended to fall out of circulation at this point, many going to Canada where the shortage of low-denomination copper continued, and others simply put away for use in any hard times that might come.

## The Hard Times

The Hard Times began in 1832 during a fight in Congress over the future of the Bank of the United States. Its proponents were certainly correct that the national bank helped stabilize the currency, smooth out regional and month-by-month fluctuations, and promote economic growth. Bank opponents, including President Jackson, were also correct in their assertions that the bank enriched the wealthy without helping working people; tended to centralize wealth in a few locations instead of spreading it around the growing nation; and imposed economic penalties on politicians who would not support the leaders of the Bank. During the national election campaign of 1832, passions ran high, and regional leaders in New England and the prosperous cities of the mid-Atlantic fought fiercely with money, slander, and political dirty tricks against Western and rural leaders who responded in kind. The political "era of good feeling," some years gone, was certainly gone forever.

The centrality of the bank in the election campaign brought economic fears into the foreground for many, and hard money, whether gold, silver, or copper started dropping out of circulation. While few recognized this as the beginning of the Hard Times, the first of what would later be known as "Hard Times tokens" were struck at this point, as merchants in some areas found it useful to provide tokens of good copper that could circulate for a cent. Issued the year the victorious President Jackson was inaugurated for his second term, the 1833 ***store card*** of Francis L. Brigham of New Bedford, Massachusetts was carefully made of enough copper to pass for a cent in circulation (Rulau 1994:99).


**Figure 5.6.** Hard Times token from New Bedford, 1833, 28 mm.

The charter of the Bank of the United States was set to expire in 1836. Opponents and proponents maneuvered to gain advantages in the fight, and after Jackson's veto of an attempt to recharter the bank five years earlier than needed, and his reelection landslide, bank president Nicholas Biddle sought to demonstrate the need for the bank by calling in loans and contracting the money supply. Jackson and his allies believed Biddle was trying to provoke a financial panic to force the recharter of the bank. Jackson stopped depositing federal funds in the central bank and deposited them in state banks instead. Cash continued to leave circulation. The 1835 store card of Alfred Willard, Boston dealer in brushes, perfumes, and combs, with its wonderful central design of an ornate hair comb, also passed for a cent (Rulau 1994:98).


**Figure 5.7.** Alfred Willard token of Boston, 1835, 28 mm.

As the economy teetered, both sides raised the stakes. Store cards continued to be issued, joined by satirical political tokens with caricatures of leading figures. As always happens in hard times, some of the tokens used images of prosperity as a sort of charm against panic.

The R & W Robinson token from Attleboro, Massachusetts, reproduces a gold medal Robinson won in New York for providing the best buttons (Rulau 1994:95–96). The medal side depicts scenes of agriculture, industry, shipping, and even medicine. The manufacture of buttons required some of the same skills and equipment as the manufacture of tokens.


**Figure 5.8.** R & W Robinson token of Attleboro, 28 mm.

The immediate political meaning of the slogan "Millions for Defence, Not One Cent for Tribute" has been debated for many years, but it likely was used mainly because when the words "ONE CENT" are enlarged, they allow this 1837 token to resemble the then-current large cent, without actually violating the law (Rulau 1994:77). The patriotic slogan dates to 1797 and was raised in response to a demand from the French government for donations and loans. In 1837 token production increased sharply as the economy went into free fall. President Jackson was leery of paper money issued by unreliable banks, particularly those allied with his enemies. Jackson's Specie Circular in July, 1836, required that all payments for public lands (then a big source of public revenue) be made in silver or gold.

Demands for coins swamped bank after bank, and many failed, first in the East and later in the West. The full collapse, the Panic of 1837, came after Jackson left office, and his place was taken by his ally Martin Van Buren in March of 1837.


**Figure 5.9.** "Not ONE CENT for Tribute" token, 1837, 28 mm.

It was in 1837 that the largest numbers of Hard Times tokens were issued. A group of merchants who operated in the Centre Market in New York's 14th Ward put out the token with a cent-like obverse and a reverse picturing the public market, naming it and bearing the word "accommodation." Accommodation, that is, to the currency emergency (Rulau 1994:106). Some newspapers of the time called the Hard Times tokens "accommodation cents."


**Figure 5.10.** "Accommodation" token, Centre Market, New York, 28 mm.

It took three years for President Van Buren and his rivals within his Democratic Party and in the opposition Whig Party to work out a compromise that established a national treasury rather than a national bank. Some inadequate economic help for the people came from the federal government, largely from the mint, that produced an astonishing twenty million copper cents during Van Buren's four years, along with more than ten million half-dollars. But during his entire term, the Hard Times continued. Not surprisingly, though historians regard his actions more highly than did his contemporaries, his reelection bid in 1840 failed. During the Hard Times, many proposals were raised to change the currency system, from incremental tweaks to radical reforms. One of these proposals, brought forward by Bavarian immigrant Dr. Lewis Feuchtwanger (1805–76), was to abolish the copper large cent in favor of a copper-nickel (or "German silver") coin of much smaller size. He believed that the silvery color of his alloy would improve public confidence in the coins. Production certainly would have been cheaper. He made some thousands of tokens that did circulate during the Hard Times but failed to convince Congress to adopt his plan (Rulau 1994:109). Over the next two decades, things changed. Later in his life, he was able to spend copper-nickel flying eagle cents, issued in the tens of millions from the mint in 1857 and 1858 that featured an eagle with wings raised on one side, and a wreath surrounding an expression of value on the other.


**Figure 5.11.** Feuchtwanger cent token, 19 mm.

## Pre-Civil War Period

Coin-size medals of the pre-Civil War period were produced with the same equipment as the Hard Times tokens but did not circulate as money until some were pressed into service at the start of the Civil War in 1861. Most were intended for wearing on the person, fastened to clothing with a pin or suspended from a cord or chain. Their use provided symbolic connections with important mass movements of their time. The temperance movement, which literally meant the avoidance of excess but in practice meant complete abstention from alcohol, became a true mass movement and was promoted by some religious leaders whose following grew through the 1840s and 1850s.

A medal worn by many temperance advocates was the Old Oaken Bucket piece, featuring a man drinking from a bucket just drawn from a well on one side, with a quote from a popular temperance poem: "How sweet from the green mossy brim to receive it, as poised on the curb it inclined to my lips." The poem, originally called *The Bucket*, and later *The Old Oaken Bucket*, was written by printer and journalist Samuel Woodworth (1785–1842) who wrote patriotic songs during and after the War of 1812; but his most popular poem was certainly *The Bucket*.


**Figure 5.12.** Old Oaken Bucket temperance medal, 24.5.

On the reverse, around the edge, is the legend "Pledged to use no intoxicating drink as a beverage." In the center, "Temperance leads to health, wealth, happiness, and long life. A.W.R." The initials are those of a General in the New York State Militia, who had the tokens struck starting around 1841. His name has been reported in numismatic articles as Ashbel Wells Ridley, but census records and his family genealogical records available on Ancestry.com show that his family name was actually Riley. His middle name (taken from his mother's family name) was spelled Welles, and it is very difficult to settle on his first name, as various documents render it as Ashbel, Ashael, or Ashbut. Riley, born in

1795, died in 1888 at the age of 93, a definite endorsement of his assertion that temperance can lead to long life.

Antitobacco medals came a little later. This particular medal was struck for the American Anti-Tobacco Society in 1855. Showing a young man trampling tobacco leaves on the obverse, it bears the pledge "I will never use tobacco in any form." On the reverse, some reasons are given: "Tobacco tends to idleness, poverty, strong drink, vice, ill health, insanity, and death." Antitobacco groups faced opposition, but the medals have been found in many states, including those where tobacco is grown.


**Figure 5.13.** Anti-Tobacco Society medal of 1855, 24.5 mm.

Tokens of opposition to slavery were rarely displayed on clothing, as the temperance and antitobacco medals were, but likelier were passed hand to hand and retained in pockets or purses. All this time in pockets could lead to severe wear, as reflected on this example of an abolitionist piece. While it can no longer be read, the original obverse inscription was "Am I not a man & a brother?" The first use of this design was by Josiah Wedgewood, owner of a major pottery works (and grandfather of Charles Darwin) who donated pottery medallions with this design to an antislavery society in Great Britain around 1790. It was later adapted to a smaller size in metal and produced in England, whence it was exported to America during the 1830s through 1850s. Some versions were made in America in 1837, though at some risk to the minters, and are often classed with Hard Times tokens. The reverse, with clasped hands, originally had a circular legend saying "May slavery & opression cease throughout the world." Another similar token, with a kneeling woman, was inscribed "Am I not a woman & a sister?"

**Figure 5.14.** Well-worn antislavery token, 28 mm.

## Civil War Merchant's Tokens

When the Civil War broke out as the Confederates fired on Fort Sumter on April 12, 1861, coins of all metals scurried into safekeeping. In a matter of days, small change and large gold coins alike were set aside and kept from circulation in the market. Unreliable-looking private paper substitutes appeared, but it was some time before the federal government managed to gear up paper money production and fill the void of coins in circulation. Meanwhile, private substitutes for cents joined the old, worn tokens and counterfeits that came out of hiding. Encased postage stamps were tried, but they were both too fragile and too expensive. Originally intended only for advertising, some store cards (a contemporary term for advertising medals) made of copper in the size of the new copper-nickel cents had been distributed during 1859 and 1860. As the coin shortage continued, they were pressed into service as small change. Dozens of private mints helped many merchants in the Northeast and Midwest to produce more store cards, some only days after the war began. As during the Hard Times, some of the store cards and anonymous issues mimicked government coins, without actually copying them. Others were of completely different designs than any coins. ***Civil War tokens*** are generally divided into store cards and patriotic tokens. Store cards had the name, and often the address, of a merchant or other business organization. The 1863 token with the Indian Head design and the date 1863 on the obverse had a businesslike reverse with the name and address of George Gage, Grocer, of Buffalo.


**Figure 5.15.** Civil War token from Buffalo, 19 mm.

The Military Hall of F. & L. Ladner was established in 1857, a culturally German establishment that functioned as a beer and singing hall for the Philadelphia German immigrant population. It also had some Irish customers and became a favorite hangout for militia members. As the word spread on April 13, 1861, of the firing on Fort Sumter, the Military Hall was swarmed by volunteers and former officers from the German revolutionary uprisings of 1848. They came to offer themselves as officers in the fight to defend the Union. On April 19, the Washington Guards, twelve hundred German-speaking men, left for Washington, DC, along with the Monroe Guards—six companies of American-born volunteers. When secessionist mobs attacked them in Baltimore, a young German immigrant became the first Philadelphian to die defending the Union. As the war progressed, the Military Hall continued to serve as a recruitment


**Figure 5.16.** The Ladners' Military Hall token, 19 mm.

point, and enormous quantities of beer were consumed by Union partisans on the premises. The token entered circulation in 1863 as a cent. The harp on the reverse was the common symbol for a singing festival, and patriotic songs in English and German were certainly often heard at the Ladners' Military Hall.

## Civil War Patriotic Tokens

"Patriotic tokens" are Civil War tokens that appeal to patriotic sentiment and do not bear the names of merchants or specific organizations. Some feature the likenesses of military leaders, like this one from New York, which was part of the Knickerbocker series, with General George B. McLellan (Rulau 1994:293). McLellan had a very high opinion of himself, and he was much admired at the beginning of the war, but many historians sum him up as a ditherer who prolonged the war. After Lincoln turned to others (particularly Ulysses S. Grant) to conduct the war, McLellan ran against Lincoln for President in 1864 and lost.


**Figure 5.17.** Knickerbocker token with McLellan portrait, 19 mm.

Many tokens feature a slightly abbreviated telegram from Secretary of the Treasury John Adams Dix to his treasury agents in New Orleans as the Civil War broke out: "If anyone attempts to haul down the American Flag, shoot him on the spot." His message was intercepted by Confederates and never delivered, but the press learned of it, and he became a popular hero. This 1863 token has the flag on the obverse, the crucial part of the message on the reverse, and the name "DIX" in the center. One blundered version, not common, says "shoot him on the spoot." At the time the token was issued, everyone knew who Dix was. In later years, there has been some confusion, especially as the South is often called "Dixie." Dix became a Union general, and was responsible for arresting the members of the Maryland legislature so that they could not meet and vote to secede.


**Figure 5.18.** Dix token: "Shoot him on the spot," 19 mm.

Another patriotic token of 1863 reflects the strong support for the Union by the Jewish population in the North. For the first time, the US Army included many Jews, from privates to generals (many with military experience in the German uprisings of 1848), and Jews and Jewish organizations were active in support for the troops, and in political support for Lincoln. Some of the craftsmen who struck tokens were Jewish, and it was probably one of them who produced the patriotic token featuring four flags on the obverse with the word "Union" and the date, and on the reverse a large, ornate Star of David enclosing a smaller five-pointed star symbolizing the Union.


**Figure 5.19.** Star of David patriotic Civil War token, 19 mm.

Firm federal action to stop the minting of Civil War tokens came late in 1863 and was fully effective in March, 1864. The Indian Head small cents struck after the spring of 1864 were made of bronze, like the tokens, with a mintage of almost 40 million, which was enough to provide a substitute for the tokens (though it appears that some of the tokens bearing the date 1863 were in fact surreptitiously struck in 1864, and the earlier date was intended to mislead federal authorities). The additional 35 million bronze cents minted in 1865 effectively displaced Civil War tokens in circulation, and after the war was over, most of the 200 million hoarded copper-nickel cents of 1857–64 returned to circulation.

## Private Gold Coins

Private gold pieces are not exactly tokens, as they (usually) contained roughly the full amount of gold that was in the equivalent denomination of the federal currency. Nevertheless, they were not legal tender, even though merchants were normally happy to accept them. They were ***bullion pieces*** traded on the basis of their gold content, which is why they are discussed here rather than with circulating currency. In most cases, private gold coins were issued in areas where gold strikes had triggered a gold rush, but the mint did not step up to the job of turning the gold into coins.

One such area was around the intersection of the state lines of Georgia, North Carolina, and South Carolina where some gold had been mined since 1799. There was a gold rush in this area starting in the late 1820s; local people petitioned Congress to open a mint in the area but were ignored. The first private mint was operated by Templeton Reid, a gunsmith, jeweler, and inventor, who had the technical ability to coin the gold but was a little weak on ***assaying*** it. His Georgia mints functioned during several months in 1830, at first in Milledgeville, and later in Gainesville. The "Georgia gold" piece dated 1830

bearing his name had a face value of ten dollars. All his coins are quite rare now, most having been melted down to make into later coins.


**Figure 5.20.** Georgia Gold private coin of 1830, 33 mm.

The Bechtler mint at Rutherfordton, North Carolina, went into operation in July, 1831. Christoph Bechtler (1782–1843), born in Baden, Germany, never became fully fluent in English. He and his sons August Bechtler (1810–46) and Karl (Charles) Bechtler (ca. 1812–44) came to Philadelphia in 1829 with his brother's son Carl Christ Bechtler (1802–78), who changed his name to Christopher Bechtler, Jr. soon after arrival in America. There are dozens of variations of the family story and conflicting birth dates and death dates for some members of the family. It has been suggested that the death of three Bechtler men who worked at refining and minting gold in a three-year span may have been the result of exposure to toxic chemicals used in the process. Christopher Bechtler Jr., who had the least exposure, minted little after inheriting the mint, and quit the business entirely by 1850, lived well into his seventies.


**Figure 5.21.** Bechtler five-dollar gold piece, 25 mm. Photograph from National Numismatic Collection, Smithsonian Institution.

The Bechtler mint produced many varieties of gold coins that can be divided into three broad categories. First, coins of Christoph Bechtler the elder, signed "C. Bechtler," which had relatively high gold content, were issued before US gold coins were reduced in gold content in 1834. All are undated. The second variety was coins signed "C. Bechtler" with a lower gold content in line with the new federal coins, of which most were undated. The single-issue, five-dollar coin with the date 1834 may have been minted for some time after 1834; the date signifies the reduced gold content in line with 1834 legislation rather than the actual date of production. The third group was signed "A. Bechtler" and were issued from 1842, when Christoph the elder turned the mint over to his son August, to 1846, when August died. At this point, additional coins signed "C. Bechtler" were issued, with the initial this time meaning Christopher Bechtler, Jr., who minted some coins until 1849 or possibly early 1850. It is often not possible to tell these from the earlier issues of Christoph the elder. One of the C. Bechtler issues is the five-dollar piece with the name and mint city, but no denomination, on the obverse.

The Bechtler mint was very successful, even for some years after the opening of two new US mints at Dahlonega, Georgia, and Charlotte, North Carolina, in 1838. The Bechtlers beat the US Mint to the one-dollar denomination by about seventeen years, and their gold dollars were regionally popular. All Bechtler products circulated heavily in the South until the Civil War. It is important to note that US silver dollars were not available until the 1840s, as the coin had not been minted since 1803. The silver dollars in circulation at that point were the Mexican *ocho reales*, or "pieces of eight," legal tender in the United States until 1857.

## *California Gold*

California was the site of the next big gold discovery, and miners (and would-be miners) from around the world flooded into California starting in 1848. The Georgia-Carolina gold finds are often cited as a reason for the seizure of Cherokee lands and the exile of the Cherokees to Oklahoma along the Trail of Tears. The gold rush in California was even more destructive to the local Native Americans, and gold fever plus state bounties on their lives led to the complete extermination of many of the California native peoples and their cultures by hired killers.

Minting was underway by the beginning of 1849, as the first "forty-niners" had arrived. After a few false starts resulting from low assay results on some of the coins, minting was firmly on track by that summer. The story of California pioneer gold pieces is long and complex, and can be read in many articles and books (e.g., Kagin1981). There were two innovations in California that broke new ground. First, high prices in California during the gold rush led to the production of the largest gold coins ever to see wide circulation, the fifty-dollar gold "slugs" or "Californians." Most of these huge coins were minted for the US Assay Office, then headed by Augustus Humbert by the firm of Moffat & Company. The authorization for these pieces called for ingots, but Humbert had the ingots struck in the form of coins, and they circulated as coins in the West and in Hawai'i where they quickly became the basic denomination in high-level commerce. This undated octagonal fifty-dollar piece was struck in 1851.


**Figure 5.22.** Fifty-dollar gold "Californian," 41 mm. Photograph from National Numismatic Collection, Smithsonian Institution.

While some silver coins were imported, there were nowhere near enough to fill circulation needs, and by the end of 1852

local private mints began to produce gold quarter-dollars and gold half-dollars, the second innovation unique to California. The new San Francisco Mint began issuing coins in 1854, and its products displaced private gold issues in the higher denominations, but it did not make enough low-value coins to meet the demand for several years. The fractional gold pieces were in heavy use until at least 1857. An example is the half-dollar gold piece of 1854, some of which have been recovered from shipwrecks, such as of the SS *Central America* that went down in 1857 (see Chapter 11). The operative theory accepted by many is that the fractional pieces made after 1857 were mainly intended as souvenirs and for jewelry, but the evidence for this is a bit skimpy, and more evidence from excavations and shipwrecks may change the end date of the circulation period. California fractional gold was minted as late as the early 1880s, and imitations were made even later. Brass imitations are still being made to sell as Old West souvenirs.

**Figure 5.23.** Gold half-dollar, 1854, 11 mm. Courtesy Glenn Schinke.

Federal law banned ***private issues*** of coins in any metal in 1864, but this was not enforced against California fractional gold pieces until 1882, when the head of the Secret Service decided to end their production. At this point production shifted underground, and many of the new pieces were backdated, often with dates that had never existed before for some particular types. Never struck in 1852, the half-dollar with the date of 1852 is a backdated piece. It is hard to pin down its date of production, but it is of good gold and is probably from the 1880s.


**Figure 5.24.** Gold half-dollar, 1852, 11 mm. Courtesy Glenn Schinke.

## *Oregon Gold*

Oregon gold actually came from California. Some gold was found later in Oregon, but quickly was exhausted. This lead to the joking explanation of Oregon's name as having been derived from "ore gone." Many Oregonian farmers, unable to resist a stab at the riches reportedly available to the south, went to California's gold country and sent back some gold dust, or brought it back with them. Trading in gold dust is frustrating, as the exact value is unknown to both buyer and seller, and the territorial governor was asked to authorize minting of coins. He refused, so some businessmen went ahead and did it on their own as the Oregon Exchange Company. The five-dollar gold piece had the initials "T.O." for Territory of Oregon. The slightly later ten-dollar piece said "O.T." for Oregon Territory.


**Figure 5.25.** Oregon gold coin, 1849, 22 mm. Photograph from National Numismatic Collection, Smithsonian Institution.

The somewhat ambiguous "native gold" inscription does not mean the gold was from Oregon, but it was from the West Coast. Not sure how to assess the purity of the gold, the company took no chances, and the Oregon beaver coins contained about 10 percent more gold than needed, which led to most of them being melted down. By the end of 1849 private gold pieces from California were readily available in Oregon, and there was no longer any demand for minting of gold in Oregon. And anyhow, their only two melting crucibles broke. Due to their rarity, it is highly unlikely that any Oregon gold pieces will be recovered archaeologically. But base-metal imitations made a century later were often given to children as toys, so if you find one, stay calm until you have a chance to weigh it. Genuine coins weigh about 9 grams and 18 grams, the later imitations just over half that. Of course there are more convincing fakes as well, as with most pioneer gold, so seek expert examination of any of these coins.

## *Utah Gold*

The only gold coins from the United States with a basically religious theme, the 1849 issues that say "Holiness to the Lord" were minted by Latter-Day Saints church officials who led their settlement in Utah. This particular coin is inscribed G.S.L.C.P.G., for "Great Salt Lake City Pure Gold." The obverse design is a three-pointed Phrygian crown, symbol of the Mormon priesthood. The Mormon gold of Utah was intended to serve as local currency. Probably in order to keep it in Utah, it contained about 15 percent less gold than US coins of the same denominations. But some Utah officials tried to defend the "purity" of the coins, some of which spelled out "pure gold" on them, and discredited themselves with California banks and merchants who had several thousand pieces, and who then melted them down.


**Figure 5.26.** Utah Gold, 22 mm. Photograph from National Numismatic Collection, Smithsonian Institution.

A rather small number remain, and they are remarkably expensive today. Generations of treasure hunters have hoped to find them around Utah and the West, but the coins are quite unlikely to turn up. There was one more try at coins for Utah in 1860, but the non-Mormon governor of Utah put a stop to the minting. Only some eight hundred were struck from Colorado gold. Again, examples are very hard to find, very expensive, and much copied. There was also a brief episode of private gold coin production in Colorado in 1860 and 1861, but most of the coins are excessively rare. A few minted by Clark, Gruber, and Company are not rare, merely scarce, but are not likely to be found archaeologically. If you find one, check its weight, and if it weighs enough, take it to an expert.

Except for a few tokens from Alaska, not seriously intended as currency, private gold pieces would not surface again in the United States until the 1970s.

## After the Civil War

After this point, tokens and medals are arranged by use rather than chronology.

Although many companies used paper scrip before and during the Civil War, the use of metallic store tokens became common some years after the war. Some were issued by independent merchants, but many were used in company stores.

Slavery had been abolished, but the system of company stores with local monopolies was sometimes likened to slavery. Workers were kept in debt to their employers, and advances on wages were issued in scrip. High prices of basic goods, as well as company-owned rental housing, were additional sources of profit for the employer. The workers' perpetual and growing debt bound them to continuing service. After each day of work, the worker was (in the words of the song) "another day older and deeper in debt." This condition is often called "debt peonage," and workers in this situation are called "tied labor." Another form of debt peonage was sharecropping, in which the value of seeds and basic food was advanced to farmers growing crops on land belonging to another, and when the poor sharecropper got his share of the crop, it was inadequate to pay the debt. Then back to work for another year, tied to the land by debt.

While some reforms were attempted, and some states outlawed paying wages in any form but US currency, the company store system continued until effective legislation suppressed most such systems during the New Deal period of the 1930s. A few company store systems survived in particularly isolated areas, but the forced credit system was no longer able to fetter workers to their jobs. Full employment during World War II was the death knell for all the systems designed to force workers to stay in ill-paid jobs. Only in the remotest areas were company store tokens used for a few years after that war. They were used in different conditions, in order to provide change in remote areas, rather than to keep labor tied to the employer.

### *Mining Tokens before World War II*

The five-cent token from Glen Rogers, West Virginia, was issued by the Raleigh-Wyoming Mining Company for use in the company store. The type can be dated to 1930–37 by the style of the reverse, with the line under "Orco" beginning with the word "registered." Judging by the substantial wear from circulation, this specific example was probably produced close to 1930.


**Figure 5.27.** Coal mine token, Glen Rogers, West Virginia, 19 mm.

The mine at Glen Rogers was notoriously one of the most dangerous places to work in West Virginia. From gas explosions, cave-ins, and falling equipment, some 160 miners died from 1918, when the mine began, to 1960, when it was shut down. The terrible record of this mine provided impetus to several improvements in mine safety regulations.

Wording on the obverse of the token from Jewell Ridge, Virginia (near the West Virginia border), clarifies how restrictive the company regulations were over the lives of the miners. To keep miners completely dependent on the company store, they were forbidden to trade tokens with other miners' families for clothing, eggs, vegetables, fruit, and other items normally traded within a small community. The token says "payable in cash on pay-days when due to employee to whom issued." This token, with a reverse inscription of "Patented" under the name Orco, was issued in 1938 or 1939.


**Figure 5.28.** Virginia coal mine token, 25 mm.

The Jewell Ridge Coal Corporation built the miners housing and the mine at Jewell Ridge as a demonstration project showing how attractive and well designed such a community could be. Certainly a step up from Glen Rogers and most other coal-mining communities, it nevertheless was a restrictive and impoverished place for miners and their families. The company refused to pay miners for their underground travel time from the mine entrance to the coal face itself until the landmark 1945 US Supreme Court decision in Jewell Ridge Coal Corporation v. United Mine Workers of America, in which the court ruled that travel within the mine was subject to compensation under the Fair Labor Standards Act.

Coal was also mined in the West, and the copper-nickel token of the Carbon-Emery Stores Company paid coal miners at Hiawatha, Utah who worked in the US Fuel Company mines. The company store also operated the large amusement hall, and provided explosives and detonators for use by the miners. The first mines at Hiawatha were begun in 1907 and opened in 1909, the houses were built beginning in 1911, and the railroad

came in 1914, just before the merger of three tiny towns to make Hiawatha, with a population of about 500. This token was shipped to Hiawatha by the manufacturer in 1916.


**Figure 5.29.** Utah coal mine token, 35 mm.

Sometime later, many Carbon-Emery Stores tokens were drilled with 4.5 mm holes (quite obtrusive on smaller tokens) for some reason not yet known, perhaps to cancel them or to mark a change in management of the store. The town was always firmly in the hands of the mining company, which made all civic and economic decisions. Segregated neighborhoods were reserved for Japanese families, Cretan families, and others. The workers from Crete arrived in Utah during the period of civil war and foreign occupation in Crete before and around the turn-of-the twentieth century. Crete became officially Greek in 1908, and the Cretan neighborhood in Hiawatha was called Greektown. Hiawatha dwindled steadily from its post-World War II population of 1,500 until the mines officially closed in 1991, leaving a handful of families. The property was later purchased by two companies owned by the Kingston polygamist group, members of the "Latter-Day Church of Christ" (not to be confused with the large LDS Church), and some private mining has recently been reported, though Hiawatha remains a ghost town.

## *Mining Tokens after World War II*

A typical example of the widespread Orco tokens, produced by the Osborne Register Company of Cincinnati, the one-dollar token from 1947 was used by the Ridgeview Coal Company of Ridgeview, West Virginia. Sets of company store tokens covering the full range of denominations were usually used, sometimes including the one-cent denomination even though it cost more to mint than its face value.


**Figure 5.30.** One-dollar Orco token, 31.5 mm.

Farther west, similar tokens were used by companies engaged in hard-rock mining of gold, silver, copper, lead, and other ores. The token from Globe, Arizona, was used by workers who mined and smelted copper ore. It was issued in 1949 by the Commissary Market operated by the Miami Copper Company. In a reversal of the usual pattern, many earlier tokens from local businesses are known from Globe, but only after World War II did the mine's own commissary issue a full set of tokens from one cent to one dollar. Judging by the limited wear on most examples seen, they probably did not circulate into the late 1950s.


**Figure 5.31.** Arizona copper mine token, 35 mm.

Various minerals are extracted from dry lakes in the Great Basin and the Mojave Desert. The chemical miners at Searles Dry Lake in the Mojave Desert spent their tokens in the company store in Trona, California (Kappen 1976:650). Some metal tokens, particularly aluminum, are normally very corroded when excavated from the highly alkaline soil in or near dry lakes. This particular example was never buried. Tokens continued in use in this remote area through World War II. Red fiber tokens substituted for the traditional metals in 1943, when coinage metals and aluminum were declared strategic materials one after another.


**Figure 5.32.** Trona store token, 19.5 mm.

Lumber and turpentine companies exploited tree resources in different ways, but both kinds of operations tended to be located in isolated forests, and both used token systems to exploit their workers, as well as the trees. The Spuds Turpentine Company issued tokens of all denominations from one cent to one dollar in St. Johns County in northeast Florida (Trantow 1978:44). Spuds was not far as the crow flies from Jacksonville and St. Augustine, but it was a world away economically.


**Figure 5.33.** Spuds Turpentine token, 25 mm.

A typical example of a lumber company token, one of the last issued, is that from the Sessions Lumber Company (1924–63) based at Wells, Cherokee County, in east Texas. It is unusual in carrying a date, (19)52. Its very low denomination of one cent reflects not only the low wages and prices of the time, but the difficulty in obtaining and retaining low-denomination coins in isolated small communities. While each such token cost more than one cent for the company to obtain, each token was used so many times that the original cost was not very relevant. Other tokens in the same series covered the range of denominations up to five dollars (Trantow 1978:187).


**Figure 5.34.** Texas lumber company token, 15 mm.

### *Textile Mills*

Textile mills also used token systems, particularly in the South where tied labor in the postslavery period was common. In some states the mills contracted with retailers to run their company stores for them, and the Aiken Stores near a number of mills were examples of token issuers whose tokens did not bear the names of the mill owners. The Aiken Store in Williamston, South Carolina, was actually a company store for a local cotton mill (Chibbaro 1990:237).


**Figure 5.35.** Aiken Store token, 20 mm.

### *Construction Projects*

Some massive construction projects used paper scrip as company store money in the early 1800s to get around coin shortages in the areas where canals and railroads were being built, as well as to make additional money from the provision of supplies to workers. During the twentieth century, company tokens were used for the same reasons at isolated sites in the West where state- and federally financed dams were built to provide irrigation water and hydroelectric power. Some of the last such tokens were used in Boulder City, Nevada, to pay the workers building Boulder Dam (later Hoover Dam). While some of these tokens may be expected to show up near the dam, many were carried away by sightseers who admired the token's depiction of the dam, and they may be unearthed by ones and twos throughout the West, and even in the East.


**Figure 5.36.** Boulder City construction project store token, 20 mm.

## Other Post-Civil War Merchant and Business Tokens

As can be seen with the Aiken Stores token from South Carolina, there can be a fine line between company store tokens and the tokens of general merchandise stores. The association between a town's merchants and major employers might be tight or loose, and it often changed over time. In most cases, the necessary research has not been done to determine the nature of the relationship. When a token does not bear the name of the employer, it is usually classed as a merchant's token. This can be misleading, and when tokens turn up at archaeological sites, it is a good idea to look into the relationships between the token issuers and major local employers, to gain a clear idea of the actual role of the tokens in the local economy.

In some cases, it is not clear whether a particular token was issued by an employer. It is useful to assess the economic situation of the community at the time, and this can help in that determination. Tripp, South Dakota is not known to have had a dominant employer, so the token issued by W. Mikuska in Tripp is likely to be from an independent merchant. The slogan "A square deal for all" fits the tokens into the 1901–09 presidency of Theodore Roosevelt, the "square deal" president, who was quite popular in the Dakotas. Three dollars is an unusual denomination but is within the normal range of one cent to five dollars.


**Figure 5.37.** Mikuska "square deal" store token, 29 mm.

As Mikuska is an unusual name, it was easy to find the proprietor in the US Census for 1900, 1910, and 1920. In 1900, he was a salesman in a general store in Chester, South Dakota, a twenty-two-year-old, unmarried immigrant from Bohemia (now the Czech Republic). By 1910, he had become the proprietor of his own dry goods store in Tripp, married, and had three sons. The eldest son being five suggests a marriage date of about 1903. Looking ahead to 1920, he was by then working as manager of someone else's store, which was also in Tripp.

Sunnyside, Utah, did have a dominant employer, the Utah Fuel Coal Company, a subsidiary of the Denver and Rio Grande Western Railroad. It was so dominant, in fact, that despite the town being incorporated, until 1950 the Utah

Fuel superintendent of mining was the mayor of the town as well. This arrangement continued after Kaiser Steel bought the town and mine in 1950, and the head of the mine continued to serve as mayor into the 1980s when the mine was shut down. Allowing the local population to pick the mayor would have been unacceptable to the mine owners, as the workers (many of them Italian immigrants with distinctly left politics) would have elected a union leader, probably a socialist, at least during the first decades of the town's existence. Despite the Utah Fuel domination of the town, it is not clear just what the precise legal relationship may have been between the mine and the Wasatch Store Company. Technically, it may have been a separate concern, although there can be no doubt that its owners did nothing to irritate those who ran the mine.


**Figure 5.38.** Wasatch Store token, 20 mm.

Alberhill, just west of Lake Elsinore in Southern California, and its workers were entirely dedicated to turning clay into bricks, tiles, and pottery, but no specific mention of the manufacturers involved may be found on the one dollar token issued by the Alberhill Mercantile Company in 1921. In the absence of evidence of a tie-in between the clay companies and the store, the token in Figure 5.38 is classified as that of a general merchandiser. This is part of a set of tokens of various denominations, but its similarity to the tokens of mining companies and other company stores results from its manufacture by a minting company that produced similar-looking tokens for merchants all over the country (Kappen 1976:6).


**Figure 5.39.** Alberhill token, 34.5 mm.

It was not unusual for store tokens to be marked in some way to note a change of ownership, to revalue them, to distinguish tokens given out at different stores with the same owner, to cancel them, and for many other reasons. Sometimes the reasons are known, but often they are not. The token with the 1874 date was not issued in 1874, but (judging by style) sometime nearer 1910. The Fremad Association was a group of Norwegian farmers in Glenwood, Minnesota, that started as a book club. In 1874 they decided to start a cooperative general store. Over the next few years it was taken over by one of the families involved, but the name was retained. The store is listed under that name until 1932. At some point, some of the tokens were stamped with an ampersand. This token was already somewhat worn when the ampersand was added, and the counterstamp has less wear than the basic token. So the counterstamping happened after the tokens had been in use for some years. Further research may show the timing of, or the reason for, the counterstamp.


**Figure 5.40.** Fremad token with counterstamp, 26 mm.

Some anonymous tokens, used when a name was not needed, were later counterstamped with the name or address of a specific business. This may be done in large numbers with a fabricated steel stamp, or one by one with a punch set and a hammer. A token with a large numeral "5" on each side is a common type that was used as a slot or vending machine token, a gambling marker, and for other purposes from around 1900 into the era of World War I. In 1930 M. E. Kelm, 40, and his wife Hulda, 27, lived in Rosenberg, Texas. They lived next door to a couple who were probably Hulda's parents, C. O. and Annie Senkel, who were born in Germany. M. E. Kelm, whose parents also came from Germany, was a fruit and vegetable vendor who owned his own cart. According to the 1940 census, he had advanced to ownership of his own grocery store. The census records his working hours as sixty per week. It is likely that at some point during his long workdays, he used a hammer and a set of letter stamps to countermark old tokens with his name. The token says "M E / KELM" on one side, and "IN / TRADE" on the other; each counterstamp brackets the numeral. The 1940 census provides an almost certain identification of this token, as Kelm is a rare name, and an examination of the record for every Kelm in the United States from 1900 to 1940 showed no other possible matches. Despite the much earlier date of the original token, the counterstamped piece appears to date from the late 1930s.


**Figure 5.41.** M. E. Kelm token, 21.5 mm.

## *Specific Merchandise*

Some tokens of general stores specify the particular merchandise for which the token could be exchanged. This is usually some basic food item, like the sack of flour named on the token from Farmers Mercantile Company in Elk Creek, Nebraska.


**Figure 5.42.** Nebraska token "Good for one sack of flour," 35.5. mm.

The reasons why most such tokens were issued are hard to determine a century later, though there are a number of possibilities. A token could be sold at the current price that would be good later, even if the price rose. This enabled the store to order in bulk, with the resultant savings, without worrying about being able to sell the merchandise. Usually in larger communities than Elk Creek, a charitable organization or a county welfare department might purchase tokens good for certain necessities and give them to the needy. Or if the store was connected to a grain miller, a certain quantity of grain would be turned in to the miller, who would give the farmer tokens for an appropriately smaller quantity of flour. This meant that the miller could grind the grain at his convenience instead of grinding it immediately to give the flour to the farmer. Some stores acted as agents for millers, accepting grain, giving out flour (or tokens for flour), and storing the grain to ship to the miller later. "One sack" seems a rather general measurement, but the precise amount would have been known to everyone in Elk Creek.

## *Business Not Specified*

Business not specified—but evident with research. The five-cent aluminum token bearing just a name and address has been listed as a general merchandiser's token, a presumed bar token, and as simply unidentifiable in various auctions and pricelists over the years. A check of the Internet shows it described as from Colorado, Oregon, and Milwaukee. But now that enough resources are available online to help researchers identify tokens, it can be pinned down with certainty as from Warren, Rhode Island. Rybarczyk was apparently William (or Wincenty) Rybarczyk, who lived on Water Street in Warren. On a City of Warren business license in 1918 he is listed as a saloon keeper at 12 Water Street.


**Figure 5.43.** Rybarczyk token, 25 mm.

A page of an excellent website simply named *Token Catalog* will come up through an Internet search engine when a name or phrase from a token is entered, together with the word "token." Doing this with the words "Rybarczyk token" yields a page with several photographs of examples of this token, and its "maverick" reference numbers from the Token and Medal Society (013069) and IKA-TAMS (001356), as well as its catalog number in the online "Token Catalog," #5218. The *Token Catalog* is maintained by volunteers, and there are enough collectors and researchers in this field that it will probably continue to be maintained for some time into the future. The page for token #5218 notes that earlier attributions to Oregon and Milwaukee have been discarded, with the attribution to Warren, Rhode Island, now securely established.

The best reference that provides detailed information on token issuers with unusual names is the US Census, which is available now up through 1940. Prohibition took effect in late January, 1920, but the 1920 US Census, taken in April, shows Rybarczyk as a "saloonist" with his "own shop." At least for official consumption, he may have served the 0.5 percent "near beer" that was still legal. He was born in Poland, and his wife Sophia was born in Massachusetts. They had four children. A number of other people named Rybarczyk lived in the United States, but they had such occupations as miner, plasterer, iron grinder in an auto factory, laborer, and farmer. The 1930 census shows Rybarczyk as a lunch room proprietor at 18 Water Street. Let us hope we can be forgiven for suspecting that a patron needing a beer to wash down lunch could find satisfaction at Rybarczyk's, despite Prohibition.

While no particular type of merchandise is specified on the token, in 1920 five cents was a common price for a beer, and for a small meal to go with a beer as well. The aluminum token is not heavy enough to have been practical for use in a slot machine, so it would not have been used for gambling. We should probably classify it as a bar token, and leave further analysis for deeper local research. It would have been used for discounting and customer retention, with the price being lowered in quantity, perhaps to twenty-five for a dollar. It was probably issued around 1918 to 1920, but it would likely have been out of use by 1930, as the address had changed. There are cases, though, of tokens continuing in use despite changes of address.

## *Rural and Small-town Cooperatives*

Many tokens do bear adequate clues to how they were used. Agricultural cooperative tokens, usually good at the cooperative store, were used in many places in the United States, Canada, and Mexico. This example was used by a farmers' co-op in Ulysses, Nebraska, which operated a store from 1918 through 1927.


**Figure 5.44.** Bimetallic token of Nebraska, farmers' co-op, 34.5 mm.

Members of the cooperative could be paid relatively high prices in tokens for some portion of their crop if the co-op could be sure of receiving the money back at the store. Using tokens

to pay farmers for at least some part of the crop guaranteed that scarce cash would not leave the area unnecessarily, and limit the use of cash by the cooperative store to items that needed to be imported from outside the community. Because many local farmers were members of the cooperative, these tokens often circulated within the area of the cooperative, and were accepted by other businesses and in small transactions between families. As was the case with many high-value tokens during the early twentieth century, this token was bimetallic, struck from two different alloys. The outer ring is normally the harder metal, the center of softer metal (in this case aluminum).

There were at least four waves of token production in connection with cooperatives. First were the tokens issued by cooperative stores organized by chapters of the Patrons of Husbandry, better known as the Grange, in the 1870s. Local Grange organizations first tried to work out formal pricing agreements with particular stores, in exchange for directing their members to those stores. The second option was the creation of a cooperative store. In the towns where they were set up, the stores often created the first tokens used in the area. In some other towns, such as Glenwood, Minnesota, groups of farmers inspired by the Grange cooperative store idea set up cooperatives under the auspices of other organizations, such as the Fremad Association, the Norwegian book club mentioned earlier. This token of the Fremad Association, without a countermark, bears the founding date 1874 but was certainly issued years later, as aluminum was quite expensive in 1874 and was only used for tokens starting in 1889.


**Figure 5.45.** Fremad token without counterstamp, 23.5 mm.

The second wave of token production began in the early 1890s and was connected with the organization of the Peoples Party, now usually called the Populists. The Populists ran candidates in elections, usually as fusion candidates with the Democrats in the North and West, and with the Republicans in the South. Many of their candidates were elected in 1894 and in some localities the years before and after. Besides running candidates, the party had many newspapers, some with editors considerably more radical than many of their members and candidates. They also organized poor local farmers, which often included the organization of cooperatives, some of which set up stores.

In many states, these organizations of poor farmers became loosely affiliated with the Socialist Party when it was organized in 1900. In states where voters stated a party affiliation when they registered to vote, this shift to the Socialist Party can be traced in the voter lists. The third wave of cooperative stores came in the first decade of the twentieth century. Some were inspired by the Socialist Party, but others were loosely affiliated with other organizations, including the Republican Party in some states during the "Square Deal" period of the presidency of Theodore Roosevelt.

In Minnesota, which became a major center of the cooperative movement, one of the major organizations was the Right Relationship League, a very businesslike group whose leadership could best be described as Christian Socialists. They organized a statewide group of cooperatives that numbered more than two hundred for a few years, including the Dundee Cooperative that used this simple five-cent token from about 1906. Though Dundee was a tiny town, the farmers in its vicinity made a considerable success for some years of their cooperative. They were part of the campaign that united farmer and labor support to force the 1911 adoption of a state law that allowed cooperatives to incorporate under their own preferred rules, requiring decision-making by majority vote of participants, rather than voting by stock ownership.


**Figure 5.46.** Dundee Cooperative token, Minnesota, ca. 1906, 21.5 mm.

A token from the end of this period comes from Astoria, Oregon, and was used by members of the large Finnish Socialist Club. It has been classed as a bar token, but this is unlikely for two reasons: its denomination is twenty-five cents, too high for a semirural drink token in this period, and while some Finns are hard drinkers, the "Red Finns" in the Socialist Party were organized teetotalers, supporters of the movement toward Prohibition. The club was organized in 1908, with more than four hundred members, and its building in Astoria, built in 1911, was a center of the town's social life until it burned down in 1923.


**Figure 5.47.** Token of Astoria, Oregon Finnish Socialist Club, 24 mm.

The fourth wave was broader politically, beginning during the teens, a decade marked by war, but also marked by a rise in nonpartisan cooperatives inspired by still-existing cooperatives from the previous waves that had seen economic success. The Ulysses, Nebraska, token belongs to this period. Some cooperatives at this time were just marketing cooperatives, some were just purchasing cooperatives, some featured formal ways of trading harvest-time labor among family farms, and a few became the dominant organizations in their towns, being connected with such cultural developments as the foundation of public libraries, the establishment of parks, or even the organization of musical groups. Some others essentially

became corporations, concentrating on production and marketing without stores or social features. Some of these still exist today, and many of their members would be shocked to learn of their beginnings as radical experiments. The broad cooperative movement was a base for some of the progressive politicians of the day, including 1924 Progressive Party presidential candidate Senator Robert M. La Follette of Wisconsin. During the 1930s, most cooperative activists joined the New Deal coalition that elected Franklin D. Roosevelt again and again. Government agencies founded to help farmers incorporated into new government programs many of the ideas developed in the cooperative movement.

To sum up, cooperatives, some of them organized by political movements then considered radical, were very important in the rise in use of tokens in the United States. Many store tokens bearing merchants' names were issued in connection with the first Grange-promoted effort to reach agreements limiting prices charged in small towns. Many tokens bearing the names of cooperatives were the first ones issued in particular localities, and the use of tokens by cooperatives inspired the production and use of tokens by other firms and organizations well into the twentieth century.

## *Trading Posts*

A specialized kind of remote store is the trading post, on or next to Native American or Alaskan Native communities or reservations. Whether operated by nontribal individuals or companies, or (particularly later) under tribal ownership, such establishments engaged in trade between the native people and the larger economy. A trading post usually had an effective monopoly of such trade in the locality, due to its remoteness and transportation difficulties. In part to take advantage of the monopoly situation, and in part to promote trade by providing monetary resources that would otherwise be lacking in the area, trading posts often used tokens.

In San Carlos, Arizona, tokens were paid out for Apache-raised produce, wool, and other local products. They could be redeemed for manufactured goods and imported produce, flour, dyed yarn, clothing, and basic goods available at any country store. The San Carlos Apache Indian Reservation, of which San Carlos is the seat of government and largest settlement, was for decades one of the poorest places in the Southwest. With precious little US currency coming in, the tokens raised local purchasing power and promoted production and trade.


**Figure 5.48.** San Carlos, Arizona trading post token, 16 mmm.

In Alaska, some native communities are among the most isolated in North America. Many were only reached by boat or dogsled in the past or by air today. A dependence on government-issued currency would have kept the local economy on its former barter basis, and made small transactions difficult (as there simply was no government-issued currency, and any that came in would vanish immediately to buy things from outside of the community). Tokens could be kept in the community and make routine small transactions possible year round. The Shishmaref Native Store operated during the 1930s through 1950s in a relatively accessible Inupiaq settlement on an island off the northwest shore of the Seward Peninsula that functions as a small fishing port in the summer.


**Figure 5.49.** Shishmaref Native Store token from Alaska, 24 mm.

It was a native cooperative, issuing tokens ranging from five cents to one dollar. A store with this name is reported to exist today, but the tokens are obsolete. Inupiaq art and local products were bought with the tokens, and the store sold the usual mix of country store-type merchandise to the local population. Particularly during the winter, when the locals depended on pack ice for protection from the seas, little currency from the outside was available to enable trade in Shishmaref. Today the pack ice has receded as the climate warms, currents and wave patterns are eroding the village side of the island, and there are plans to move the whole village a few miles to the mainland before it erodes away in a storm. Someday, the present site may be marked only by artifacts that wash out of the beach, including an occasional aluminum token.

## *Restaurant and Café Tokens*

Restaurant and café tokens have been used in isolated areas, but most are from larger towns and cities. Discounting and advertising were the main reasons for their use. Some tokens say "restaurant" on them, or at least "rest." in the case of the aluminum token good for ten cents in trade. It could not be found listed in any token reference, possibly because the 1940 census has only been available since 2013. Looking up the address 564 Chili Avenue on an online mapping service shows it can only be found in Rochester, New York. A look at the map, and at a street view of the building, shows that it is now a "Jamaican and American restaurant," occupying a building that is at least seventy-five years old. The next step was to check the 1940 US Census for Rochester, which shows a listing for Leo J. Dodd, then fifty-three and proprietor of a restaurant. He could not be located as a restaurant owner before 2013 because, in the 1930 census, he was a shoemaker employed in the same shop as his sister-in-law, who lived with Leo and Anna Dodd, their two children, and Anna's brother, a book binder. There were no clues in the 1930 listings that he would ever run a restaurant. Thus, it is a good idea to look up "unidentifiable" tokens every now and then, as more and more information is being placed where it can be found on the Internet.


**Figure 5.50.** Restaurant token from Rochester, 25 mm.

The token from Longley's Restaurant in San Francisco is in the style of the late 1950s. It claims that the restaurant has been around "since 1849," though there appear to be some gaps in the records. The face value of five cents was already a very small sum in the 1950s, and it may have been intended almost entirely as an advertising piece. The Plaza at the Golden Gateway Center was swallowed up in a redevelopment scheme in the mid-1960s.


**Figure 5.51.** Longley's Restaurant token, 25 mm.

Many tokens do not state a type of business on them. New Riegel is a small farming village in north-central Ohio. Everyone in New Riegel in 1930 certainly knew that R. M. Schindler ran a restaurant near the crossroads, so putting "restaurant" on the token seemed unnecessary. The first big standard reference on Ohio tokens (Lipscomb 1986) listed this token as #NE3560 but did not mention that Schindler used the token in a restaurant, because this information was not available before 2003, when the 1930 US Census became available for examination.


**Figure 5.52.** Schindler token, 24.8 mm.

The token from Jonny's Cafe in Newport, Kentucky seems to have a bite taken out of it, but the token was issued that way. Many tokens from this area of Kentucky are oddly shaped or appear to have pieces removed. This was a local custom that helped people distinguish one token from another easily. Such tokens appear to have been issued during the 1920s and 1930s.


**Figure 5.53.** Odd-shaped token of Jonny's Cafe, 21 mm.

## *Dairy Tokens*

Dairy tokens were sometimes used for discounting, but the main reason for their use was theft prevention. The tokens were left outside the house door inside empty bottles, and the milkman would collect the empties and leave milk or cream in exchange for the tokens. Obviously, coins left outside the house would be likely targets of thieves. Because theft is more likely in larger communities than in most smaller ones, dairy tokens were issued in cities, as well as smaller towns. The Burr Creamery delivered its milk in Los Angeles, a large city indeed.


**Figure 5.54.** Burr Creamery token, 21.5 mm.

Dairies were originally family owned, and required some acres of land to operate. The family names on many dairy tokens, like those from Sadler's Dairy in Santa Cruz, California, enable the researcher to find the operators in census records, city directories, and land records. The Sadlers appear to have operated the dairy from sometime in the teens to the mid-twenties of the twentieth century.


**Figure 5.55.** Sadler's Dairy token, 23.5 mm.

Don C. Sadler was listed as a retail grocer in the 1910 census. By the time of the 1920 census, Don was listed as the operator of the dairy, on rented land. He and his wife Minnie were both from Arkansas, and their parents were also from Arkansas. Each of their seven children was born either in Arkansas or California. It appears they moved to California around 1908 because their thirteen-year old daughter was born in Arkansas, but their eleven-year-old son was born in California. Looking ahead in the 1930

census, the family underwent major changes. Minnie was no longer listed, but Don had a new wife, Elizabeth C. Sadler. Elizabeth was born in Arkansas to parents born in Virginia and North Carolina. We likely have Elizabeth's maiden name, Clark, as Alice L. Clark, sixty-nine-year-old widow, lived with them, and was recorded as Don's mother-in-law. The enumerator wrote that the forty-three-year-old Elizabeth had been married for forty years, presumably a blundered attempt to write *four* years. And Don Sadler was no longer a dairyman but an insurance solicitor. Only two children remained at home; the other five were above the age of 16, which in those days was a common age to marry or go out to work. Santa Cruz newspapers and city directories from the 1920s are not yet available online, but some research in the Santa Cruz main library would probably fill in the blanks in the history of Sadler's Dairy.

The unavailability of strategic metals for civilian use during World War II, both in the United States and in Canada, led to the production of tokens of other materials, including plastics. Plastic tokens continued to be produced after the war, including the blue plastic token from the Jersey Dairy of Chilliwack, British Columbia, which is probably from the 1950s. Similar tokens were issued with a phone number in 1952 and a different phone number in 1961. The earlier phone number had enlarged heart-shaped holes. This token is blue. Red tokens are more common in the numismatic market, but this may have nothing to do with how common each color may be beneath the soil of British Columbia.


**Figure 5.56.** Plastic token of Chilliwack, British Columbia, 20 mm.

## *Bakery Tokens*

Sold in quantity at a discount, bakery tokens gave the usual price advantages to customers, and their advance sales also provided clues to the baker regarding the appropriate level of production, which was more crucial to a baker than to merchants dealing in less perishable goods. In many cities, though this is often hard to determine from existing records, bakery tokens were used much like diary tokens; they were placed in an outside bread box beside the kitchen door of a house to order and pay for a specific number of loaves. This token from Riverside, California, bears an address of 952 Main Street, half a block north of the county court house. A review of city directories shows that German-born Michael Walter had a bakery at 915 Main from 1907 to 1909.


**Figure 5.57.** Riverside, California, bakery token, 27 mm.

The 1910 census shows him at thirty-five as the manager of someone else's bake shop, no address being given. He is again shown in the city directory as a bakery owner, this time at 924 Main, in 1911 and 1912. During 1912, his bakery moved to 952 Main, and continued to operate at that address into 1914. Sometime in 1914 he and his family left Riverside, and his bakery became Bonnett's Bakery, operating at that address until 1920. So the token was probably issued in 1912 and remained in use until 1914. As often is the case, the information on an undated token, interpreted in the light of contemporary records, can provide a date for the token.

## *Cigar Tokens*

Cigar store tokens were issued in a large number of communities, and they had a broad range of uses. Such a token, like this one from Haverhill, Massachusetts, advertised the store and was normally used for discounting and customer retention; it would have been sold to regular customers in quantity for less than face value. This token was used around 1908 to 1910 before Fred L. Blinn moved to Maine and became the owner of a hotel in Cumberland County.


**Figure 5.58.** Cigar token from Haverhill, Massachusetts, 24 mm.

Many cigar tokens, like the Climax Cigar Store token from Aberdeen, Washington, were the size and approximate weight of a five-cent coin. Such tokens often were intended for use in gaming slot machines. In places with legal restrictions on cash payouts, the payout in tokens was formally only redeemable in cigars or other merchandise. But in most stores, when only discreet regular customers were present, the token payout was actually exchanged for cash. Further, in dry communities, during the period leading up to national alcohol prohibition, many shop owners discreetly provided alcoholic drinks for tokens. Cigar stores were restricted, socially if not legally, to adult males, and except in the largest cities the customers were familiar to each other and to the proprietor. Many bookmakers for gambling concerns were either operators or habitués of cigar stores, and adding bootlegging to illegal gambling was a logical development.


**Figure 5.59.** Climax Cigar Store token, 21 mm.

### *Barbers' Tokens*

Barbershops were (and often still are) male-only establishments. Most barber tokens were no doubt used to pay for shaves and haircuts, but some barbers also provided drinks to customers in dry jurisdictions, and not a few barbershops contained slot machines. So tokens the size and rough weight of a US coin may have served more than one purpose. Aluminum tokens, too light to work in slot machines, probably paid only for haircuts. This aluminum token was used in a barber college in Kansas City, Missouri. Ten cents was at the low end of the price range for a haircut at the time, since barber college haircuts could be less than perfect. Note the graffito in the obverse field: "6-6-1908." A Saturday in 1908, June 6 is at the end of a standard school year and may mark someone's date of graduation from the school.


**Figure 5.60.** Barber college token, 29 mm.

### *Manicure Tokens*

Manicure tokens were used for advertising and discounting. The aluminum token the size of a quarter was good for one manicure at Hepner's in Hollywood, California, and was probably given out to prospective customers on the "first one's free" principle. Separate shops for manicurists were not common until the 1930s when this token was issued.


**Figure 5.61.** Manicure token of Hepner's in Hollywood, 24 mm.

### *School Cafeteria Tokens*

School cafeteria tokens may be good for a certain amount of money (often five cents before World War II) or for a meal. If the token says "1" without specifying cent or dollar, it usually is good for one meal. This appears to apply to the token with the six-pointed star on the reverse, which on the obverse is inscribed "Good for 1 / P.C.H.S.C." Looking it up on *Tokencatalog.com* enables decipherment of the initials as "Ponca City High School Cafeteria." Ponca City is an oil town in Oklahoma that is named for the Ponca Nation whose headquarters is close by. There are at least two varieties of the token, copper-nickel and aluminum, and they appear to date from the early twentieth century. Like most school lunch tokens, they should be present in the soil at and near the school site.


**Figure 5.62.** High School meal token, 19 mm.

### *Canteen Tokens*

There are several reasons for the issue of canteen tokens, which were good toward meals at a dining room operated by an organization for its employees and sometimes for its customers or clients. In many countries, canteen tokens are used in the dining room at the national mint because employees are not permitted to have coins on the premises (a precaution against theft). Before welfare checks cash aid was provided to the needy in some places, and a place that handled this cash might also forbid employees from carrying cash on the job. In other cases clients of a welfare agency might be given tokens for lunch when they must be present at the office during lunch time. While the precise reason is not clear, the City of New York Welfare Department used five-cent tokens in its canteen during the 1930s, back when five cents was a normal price for an inexpensive lunch.


**Figure 5.63.** Canteen token, 19 mm.

### *Civilian Conservation Corps Camp Exchange Tokens*

At the beginning of the New Deal, the Civilian Conservation Corps set up camps around the country from which construction and forestry work was done, mainly in areas at a distance from major cities. As most of the areas were remote, camp exchanges were set up to allow the men to buy necessities and a few inexpensive luxuries. The exchanges were loosely modeled on the post exchanges at remote military bases. Many of the camp exchanges, like many of the military base exchanges, used tokens. C.C.C. Company 1744 spent 1934 and 1935 at Camp F120, or "Camp Echo," in Shoshone County, Idaho. The token was good for ten cents at the camp exchange (see example below). Thanks to a photo and caption in the *Spokane Chronicle* October 26, 1934, we even know who accepted the tokens over the counter at the exchange: Storekeeper E. R. Johnson.

Be careful about assumptions in regard to tokens inscribed "C.C.C." Some are not from Civilian Conservation Corps camps. Sometimes it is not entirely clear exactly why the


**Figure 5.64.** C.C.C. token from Idaho, 18 mm.


**Figure 5.65.** C.C.C. token not from a CCC camp, 21 mm.

initials are on a token, even when we know its origin. The Carroll Commercial Club, previously known as the Citizens Commercial Club, flourished in Carroll, Iowa, during the early years of the twentieth century. While under the leadership of Craton C. Colclo, its secretary for many years and its president at some point, it issued these "C.C.C." tokens. Craton C. Colclo was a local businessman and sometime elected official, whose family members in Carroll were all gone by the time his wife died in the mid-1930s. He then moved into the offices of what had become the Carroll Chamber of Commerce as the live-in custodian. He spent a little time in hospitals before dying at the age of eighty-nine in 1941, but the CCC building was his last residence. Carroll today has a Central Christian Church, Carroll Car Credit, and a Carroll Child Care. The Carroll Chamber of Commerce is still around, and Crouse Cartage Company used to operate a thriving business from the town. So "C.C.C." has a multiplicity of local meanings. Whether this token was issued in the name of Craton C. Colclo, the Citizens Commercial Club, or the Carroll Commercial Club, it was good for a five-cent cigar, meal, or perhaps a drink. At least five types exist, indicating that it was used for some years.

## *Bar and Saloon Drink Tokens*

Tokens good for alcoholic drinks at bars, saloons, taverns, and other establishments are broadly divided into two groups, those used up to 1920 and those used from 1933 on. Prohibition was enforced starting in early 1920 and was first relaxed and then repealed in 1933. Licenses of one sort or another, at the federal, state, and local level, have been required for those selling alcohol throughout the last two centuries. And this makes bar tokens easier to research than some others. Another name for a bar serving beer has been a "parlor," as shown on the five-cent token from the Adolph Moeller Beer Parlor in Dysart, Iowa, used around 1910 (see example above).

Confirmation that the price of a drink was also the price of a cigar comes from this token from Tonopah, Nevada. It was good at F. Vericelli's Place for "One drink or cigar."


**Figure 5.66.** Iowa beer Parlor token, 20 mm.


**Figure 5.67.** Nevada "drink or cigar" token, 21 mm.

The reasons for the issuance of bar tokens include discounting and customer retention, but there are others. Normal pricing for drinks was often not expressed in even cents, and a token could be helpful in collecting or making change for such prices as six and one-quarter cents, or twelve and one-half cents, both common prices for drinks for many years after Mexican *real*-based denominations ceased to be legal tender in the United States in 1857. Six and one-quarter cents, half a ***bit***, was the standard price at the Alaskan Hotel Bar in Juneau from 1913 to 1917. The price of a beer was also often the price of a meal, and this token (like the last) was good "in trade," not just for a drink.


**Figure 5.68.** Alaska beer token, 21 mm.

After prohibition was repealed, bar tokens came back, and some of them were fancier than ever. David Snyder had operated a billiard, pool, and bowling establishment on the second floor at 38 South 6th Street in Minneapolis for twenty years, and took advantage of the end of prohibition to offer legal drinks. He had issued a number of billiard and pool tokens in previous years. At least in part as a celebration of the new wet times, a flamboyant gold-plated, fifty-cent token was issued showing a glass, an open bottle, and an ashtray from which smoke rises. In 1936 the Snyder family opened a ground-level liquor store at the same address that continued in business until the late 1960s, well after the bowling alley shut down in 1946 (see below).

Much plainer tokens, often using stock ***reverse dies*** of varying age, were the norm for postprohibition bar tokens. Victor M. Cascarelli (1915–2006) operated Vick's Bar in Clifton, Arizona, for a clientele of hard-rock miners from at least 1936 through 1941.


**Figure 5.69.** Snyder's token, 30.5 mm.


**Figure 5.70.** Arizona token good for a tune or beer, 21 mm.

It was across the street from the Cascarelli Building (named for his father) that housed the Italian American Club. His customers, and his bar whose central feature was one of the last Cremona Orchestrions in the country, provided him with a rich fund of stories that made him an effective raconteur for the rest of his long life. While the token was good at the bar, in all likelihood the chief purpose of the tokens was to play music on the Orchestrion. He passed along a few of the tokens to a daughter-in-law, who has since given one to each of her sons, and one of the tokens was placed in his coffin when he was buried. But it is likely that most of the tokens remain in the soil of eastern Arizona, dropped by miners and by children who were allowed to play with the tokens after they could no longer be used at the bar.

Many establishments that are not simply bars serve drinks. The token from Rojon's Billiards in Stockton, California, was good for a forty-cent beer, and as the price suggests, the token is from much later than its general appearance would indicate. In the study of tokens, as in contract law, it is important to study the fine print. The style of the token is from around the turn of the century, but the phone number is from much later, with seven digits. On the reverse, in small letters, it says "D. H. Feisel, Palo Alto, Cal." Dwayne Feisel, a numismatist, collector and dealer in tokens, and agent for at least one token manufacturer, took great pleasure in arranging the production of tokens with an old-time look for merchants in Northern California. When he could, he made sure that they would not be mistaken for genuine old tokens, either by including his name in small letters or by using telephone numbers or other indicators of a recent production date. This particular token is from the early 1970s.


**Figure 5.71.** Stockton beer token, 28.5 mm.

## *Fraternal and Union Food and Drink Tokens*

Fraternal organizations, which broadly defined include such groups as the Elks, the Moose, the Independent Order of Odd Fellows, the Fraternal Order of Eagles, and such veterans organizations as the Veterans of Foreign Wars and the American Legion, have often maintained halls where members could congregate, talk, drink, and play cards. Union halls where men waited to be called out to work hosted similar activities. In fact, some men were members of three or four organizations, including a union, a veterans' organization, and one or two fraternal organizations. If their money held out, they had no need to go home at all except to sleep. Cards might be joined by dominos, and even gambling slot machines. The tokens often lack all clarifying inscriptions because the sheriff might find clearly inscribed gambling tokens a bit hard to overlook. It can be difficult to draw the line between gambling tokens or poker chips on the one hand, and food and drink tokens on the other.

Some tokens were used for both purposes. The Portland Co-operative Labor Temple Association maintained a hall used by several unions, and if a man was not called out to work, he could use special tokens to buy snacks or drinks while sitting around with his buddies. This half-dollar-size token is made of red compressed fiber and thus must date to 1943 when this material substituted for strategic metals. Both green and red examples of similar quarter-size tokens are found. Earlier tokens of the same design were struck in bronze or brass. Scarcer aluminum tokens bearing denominations of five cents and ten cents are earlier still, probably from late 1920 when the Labor Temple first opened.


**Figure 5.72.** Oregon labor temple token, 1943, 30 mm.

A token that just says "FOE 1562" with a value indicator on the reverse only *looks* hard to identify. Those who work with tokens learn to recognize the initials of all the fraternal organizations, of which the Fraternal Order of Eagles is one. Aerie 1562 of the FOE can be looked up easily whether on the FOE website or through any search engine, and turns out to be located in Gettysburg, Pennsylvania. This bronze token is earlier than other tokens from the same Aerie, made of aluminum and then plastic, all of which have the town name on them (Aqua 2000:311).


**Figure 5.73.** Gettysburg "FOE 1562" token, 21 mm.

Some tokens are cryptic, and must be found in references to be identified and interpreted. The initials on the token from Erie, Pennsylvania, an old industrial city between Ohio and Buffalo on Lake Erie, stand in German for Arbeiter Frohsinn Gesang Verein (Aqua 2000:263). An English translation of the name would be something like "Workers Joyful Singing Society." The clasped hands on the reverse were used as symbols of cooperatives, working-class voluntary societies, and the like. What this very likely means is that the token was used in a hall run by the AFGV, where lots of singing and beer drinking took place. The token predates Prohibition. No denomination is stated, but the token was probably good for one beer. An octagonal brass token from the same dies is known, and may have been minted before this aluminum version.


**Figure 5.74.** Token of Arbeiter Frohsinn Gesang Verein, 23 mm.

## *Bottle Deposit Tokens*

Bottle deposit tokens are not encountered often, but they are known from a number of places. Before the era of plastic, aluminum, or thin-walled glass soda containers, all sodas and many beers were sold in sturdy glass bottles for which a deposit was charged, which would be refunded when the bottle was returned for reuse. The octagonal token inscribed "L.E.R.C. BOTTLE DEPOSIT" was used in Palmdale, California, in the northeastern portion of Los Angeles County in the Mojave Desert. The initials stand for Lockheed Employees Recreational Club. When turning in an empty bottle, the employee received a token. Want to buy another bottle? Better have a token; this encouraged the return of empty bottles.


**Figure 5.75.** Bottle deposit token, 23 mm.

## *Food Stamp Change Tokens, 1939–43*

Toward the end of the Great Depression, a federal program provided low-income families with supplementary coupons that could only be spent on food. In an effort to ensure that the poor could not redirect spare cents from their purchases into nonfood expenditures, regulations required that change be given in some form other than coins. Many stores minted metal tokens with which to give change for food stamps, though others used paper certificates. As the program continued into 1943, and red fiber was substituted for metal in most tokens that year, this change token from Ralph's Grocery Company of Los Angeles must have been produced during the last year of the program that ended late in 1943. Full employment had made food stamps unnecessary—for a time.


**Figure 5.76.** Ralph's Grocery food stamp token, 1943, 19 mm.

## *Food Stamp Change Tokens, 1972–75*

As the deep poverty in certain areas of the country received more publicity during the 1960s, and farm organizations were concerned about markets for their products, a deal was struck in Congress between farm state representatives and representatives from areas with high poverty rates, and food stamps were issued again. Some members of Congress were very concerned that stray change from food purchases might be spent by poor people on noneligible food items, or on such luxuries as toilet paper or soap. To prevent this, stores that accepted food stamps were required to give change in coupons or tokens that could be spent later only on eligible items. Once again, some stores struck metal tokens, like the one-cent token from the Wilco Food Center in Gary, Indiana, issued in 1972.


**Figure 5.77.** Wilco food stamp token, 1972, 16 mm.

Many stores used plastic tokens, usually in a standard series from one cent to fifty cents. A typical example is the five-cent, green plastic token from Wallingford Country Store in Wallingford, Vermont (see example below). Similar tokens can be found from stores all over the country. Even when the state is not mentioned on the token, the store can easily be located online, as there are many collectors who seek tokens from this series. By the end of 1975, complaints from store owners about the cost and trouble involved in obtaining and using the tokens found listeners in Washington, DC, and common sense prevailed. Merchants were allowed to use coins to give change in amounts under one dollar, a dollar that had purchasing power of well under a quarter in 1938 money.


**Figure 5.78.** Vermont food stamp token, 29 mm.

## *Fair, Bazaar, and Convention Tokens*

Fair, bazaar, and convention tokens may be used once, or at an annually recurring event, and are usually intended to raise funds for a charitable cause. The Elks Club of Yuma, Arizona, held a bazaar from April 7–12 in 1913 and had special "Elk's money" struck for use there (Spooner 2010:274).


**Figure 5.79.** Arizona Elks Club token, 38.5 mm.

The usual procedure is for the customer to buy a certain amount of token money, and the charitable cause gets the money whether all the tokens are spent or not. Sometimes the tokens are sold at public events beforehand, and peer pressure can induce buyers to take a larger amount in tokens than they might have purchased in private. The only other denomination made for this event was an eight-dollar piece of the same size. The bazaar must have been successful, as the Elks did it again. They struck an undated one-dollar token and an undated eight-dollar token to use at subsequent bazaars. Eight dollars in 1913 was roughly comparable to one hundred dollars in 2014.

Kansas held a big celebration in 1941 for the 400th anniversary of the visit of Francisco Vazquez de Coronado y Lujan, who slaughtered his way through the Native Americans of New Mexico in 1540 but was more circumspect with the people he met in Kansas, as they outnumbered his expedition by a good margin. The Coronado Cuarto Centennial in Kansas coincided with the celebration of the centennial of the Pony Express, and the climax of the Coronado event was the arrival of a group of mounted young men playing the part of Pony Express riders.


**Figure 5.80.** Coronado Cuarto Centennial token, 1941, 22 mm.


**Figure 5.81.** Shriners' circus token, 1961, 25 mm.

A token was issued that was "good for 5 ¢ in trade until Pony Express." The obverse shows Coronado mounted on a horse (not, as sometimes stated, a Pony Express rider!).

A circus sponsored by the Shriners in Anchorage, Alaska, in 1961 used a token that was "good for 25 ¢ in trade," but they tried to encourage people to keep them rather than spend them. The reverse says "keep me–good luck" and bears the signature of Dave Nelson, son of bandleader Ozzie Nelson and brother of singer Ricky Nelson. The circus, from California, performed from June 9 to 19, featuring Dave Nelson as a special guest.

## *Brothel Tokens*

### Shell Cards Advertising Brothels

Shell cards advertising brothels are known from France, and a few were made during the late 1800s to advertise American brothels as well. They are quite rare but must once have been more common, indicating that some will probably turn up in archaeological excavations in the cities where they were used. The shell card of Miss Olga was distributed as an advertisement in Denver, Colorado. Shell cards are fragile; they are of two very thin pieces of metal (usually gold plated) that typically have cardboard in the middle. Some other ornate advertising tokens for brothels exist, but none bear a value or were used in trade. All are very discreet, and do not openly state the nature of the business.


**Figure 5.82.** Miss Olga shell card, 22 mm.

### Fantasy "Brothel Tokens"

Some tokens were used in some brothels, but they were mostly bar tokens good for a drink, or sometimes used in slot machines. They are identical in appearance to other bar and slot machine tokens of their periods. A few brothel-issued tokens are known to have been used in American brothels to pay for time with prostitutes, but they are scarce. They are also very simple, small, and certainly do not carry any wording on them that would indicate the nature of the business. Generally speaking, they carried an address, a stated value, and nothing else. Their status as brothel tokens can only be established through research. The

customer bought one from the proprietor and gave it to the prostitute, who would turn it in later for a much smaller sum in cash. The very idea that such tokens might bear the names of the establishments, let alone the proprietors, dates only to about 1965 when some ***fantasy*** "brothel tokens" were sold with other fake "Old West" memorabilia by dealers at swap meets and low-end souvenir stores.

As soon as they appeared, the invention of appropriate documentation began, and various leaflets and booklets attempted to convince customers that the large fantasy tokens had actually been used in brothels of the previous century. They hadn't. A typical example of the early fantasies is the Diamond Lil piece, allegedly from San Francisco (Alpert 2007:26). The origins of these fantasies in California and Colorado in the mid-1960s have now been thoroughly documented, and the individuals who produced the first ones have been named in such works as *The Fantasy Brothel Tokens: A History and Catalogue* by Nolan Tucker (1997). An updated catalog by Stephen P. Alpert was published in 2007.


**Figure 5.83.** Diamond Lil brothel token, 44 mm.

Another example of a fantasy "brothel token" demonstrates the market consciousness of the creators of these fraudulent pieces. Tokens with a denomination of three dollars tend to sell for more than those with denominations of one dollar or five dollars, so they used a three-dollar denomination on the "Uncle Sam Hotel" fantasy token. Arizona tokens sell for more than tokens of neighboring states, so it is given an Arizona address. And tokens bearing the name of a territory are more popular than those issued in the same area after statehood; so "Arizona Territory" is prominently included in the inscription (Spooner 2010:285).


**Figure 5.84.** Fake Arizona Territory brothel token, 37.5 mm.

It is quite possible that some of these tokens may turn up in excavations. After all, the earliest have been around for fifty years and it has been a common practice of the fraudsters to bury the fantasy tokens for weeks or months in order to produce a patina that will give the illusion of age. Also not to be discounted is the possibility that practical jokers and malicious tricksters will "salt" them in archaeological excavations. But no matter where they are found, there can be no doubt at all that they are entirely fraudulent, and none were produced before the mid-1960s.

Some actual large-size brothel tokens came into being in Nevada during the early 1970s. But like most earlier genuine tokens used in brothels, they were drink tokens or slot machine tokens. The Chicken Ranch token, good for one drink, is a typical example. Almost all were sold as souvenirs, but a few may have been exchanged for drinks at the bar in the Chicken Ranch. Although the token is inscribed Las Vegas, houses of prostitution are illegal in Las Vegas and the rest of Clark County.


**Figure 5.85.** Chicken Ranch drink token, 39.5 mm.

The Chicken Ranch is actually across the Nye County line near Pahrump, a full hour's drive from Las Vegas. A few legal Nevada brothels have produced silver "tokens" supposedly good in trade for amounts ranging up to twenty-five dollars, but these are just souvenirs, and none are actually used in trade. They are sold to collectors of one-ounce silver rounds, and may occasionally be encountered among other silver rounds in the bullion market. Similar one-ounce silver pieces may also be found with the names of long ago or fictional brothels, but they were produced at the same silver mints and distributed through the same silver trade networks. It would be unusual for one to be lost or buried, and archaeologists are very unlikely to encounter them. Even more recently, some bimetallic pieces have been issued that mimic the part-silver bimetallic tokens of casinos and are allegedly good at certain brothels. None have actually been used in trade; all are purely intended as souvenirs and collectibles.

Many more fake brothel tokens have come on the market in recent years, including concoctions of wood, plastic, and various metal alloys. Some are much-enlarged copies of old shell cards struck in brass or other metals. Several types are found with engraved or punched names of women, and are reported to be displayed for sale in racks like the small license plates bearing first names. The one thing an archaeologist or numismatist must keep in mind is that "these tokens are neither copies, nor replicas, nor reproductions of actual old tokens from the nineteenth century, despite what some sellers of these tokens may state or imply" (Alpert 2007:1). They are fantasies, and all references to them as real, or possibly real, or even copies of originals are fantasies too.

### Tokens of Perfectly Respectable Establishments

Tokens of perfectly respectable establishments have been misrepresented as brothel tokens by sellers who hope to raise the price of their merchandise. For example, the "good for 25 ¢ in trade"

token with "Sourdough Lil's Est. 1893 Skagway" on the obverse is really from a restaurant in Westport, Washington. Sourdough Lil herself, the restaurant proprietor Lillian McKerr, was born in Skagway, Alaska in 1893, and she operated her restaurant from 1949 to 1954. The new owner, still operating under her name, issued this in-fun imitation of old-time Alaskan tokens in 1955, ordering 10,000 of them (Benice 1994:248).


**Figure 5.86.** Sourdough Lil's token, 24 mm.

Any found in Alaska were imported there from the State of Washington, over half a century after the gold rush. These tokens have been misrepresented as those of a Skagway brothel, and sold for amazing sums. Imitations of this token have even been struck to sell as originals.

## *Movie Money*

Fantasies of the silver screen have also involved tokens, but the whole point of these pieces was to avoid being similar to the real thing. From early in the history of the cinema, government authorities in many countries, including the US Secret Service, restricted the depiction of paper currency and coins in films, forcing moviemakers to use substitutes that could not be mistaken close-up for real money. When cops and robbers fought over wind-blown stacks of banknotes and spilled sacks of coins, the props portraying the money did not come from banks or government mints. Specialized private mints made "coins" that might look convincing on film, but could never be mistaken for the real thing in person.

With a twelve-spoked wheel on one side, and "2 bits" on the other, this quarter-sized aluminum piece of movie money bears the small name "Curry's" under the word "bits" (Kappen 1976:172). Curry's, in Hollywood, sold massive amounts of movie money to studios in Southern California, and pieces may be found in future years at remote locations where movies were filmed, as well as under and near studios. Federal law eased up on depictions of money during the 1970s, and real coins, as well as real (or more convincing copies of) banknotes, are now being used as props.


**Figure 5.87.** "2 bits" from Hollywood, 24 mm.

## *Tokens of Prisons, Jails, and Youth Camps*

Prison tokens are used to keep money out of the hands of both prisoners and guards as a means of somewhat lessening the corruption of black markets and associated bribery. "The Tombs" in New York City is the main city jail in Manhattan, where those arrested are taken to be kept until their arraignment, and short-term prisoners serve their sentences. The name is derived from the old building of 1835–40 at the same site, a jail modeled on an ancient Egyptian mausoleum, replaced in 1902. The old name was used in official documents, and for that matter still is. The name also appears on tokens used in the early twentieth century within the jail. One side of the one-cent token says "City prison—Manhattan—The Tombs," while the other side says "Department of Corrections—N.Y. City."


**Figure 5.88.** Prison token from The Tombs, 18.5 mm.


**Figure 5.89.** Michigan prison token, 21.5 mm.

Chippewa Temporary Correctional Facility is in Kincheloe, on Michigan's Upper Peninsula. Some years ago, the state renamed it Straits Correctional Facility. The five-cent token appears to be from the 1950s. While official efforts are made to keep such tokens in the prisons, a few leak out. Most that appear outside the prison are those sold for scrap after a name change or after a prison is shut down (a rather rare occurrence). These tokens may be found inside a prison's walls or fences, or in quite distant places they go after they are no longer valid, such as collections, dealer's stocks, or sometimes the places where children go who are given such tokens for play.

### Juvenile Facilities

Juvenile facilities also may have tokens. The George Junior Republic was founded as a summer colony in 1895 by William George (1866–1936) and later spread to several other sites in additional states as a long-term facility. Its internal economy was largely based on token use, and the young people in the facility had to work to earn their living; they were charged for their food and everything else. The motto was "nothing without labor." They had their own laws, their own congress, and their own police (though William George, or his successors

as directors, had final say in all matters). The obedient hardworking residents were able to accumulate money in the form of tokens and bills good only within the facility. At first, the inmates were a mix of poor children, orphans, and delinquents, but over the years a larger and larger percentage of the "citizens" were sentenced to the facility by judges or committed by probation officers.


**Figure 5.90.** Youth token with William George, 19 mm.

William George built up quite a following, and his books and lectures gained him many admirers. After being the founder of the first Junior Republic at Freeville, New York, he moved up to head the National Association of Junior Republics in 1908. He retained that job after being forced to move from the Freeville facility in 1910 after his conduct with young women was criticized. There were further scandals, and George claimed not to remember what happened after he got into bed with several of the Republic's citizens. More damaging even than these incidents were the press reports of brutal punishment inflicted upon George's charges, sometimes at George's instigation and sometimes by decision of the citizens' own police and courts. The punishments, including frequent whippings, continued for many years. It was not until 1950 that corporal punishment at the Republics in the East was reined in. Despite the many problems, his memory was honored at the Republics after his death, and he is still admired in some circles today. George's portrait appears on the obverse of the one-cent token issued in 1946, ten years after his death. The reverse features a flag, an axe, and a book.


**Figure 5.91.** George Junior Republic token, 21 mm.

A "California George Junior Republic" was founded in 1909 in the San Fernando Valley and soon moved to Chino, in San Bernardino County (Kappen 1976:71). The one-cent token with the initials "C.G.J.R." was used there, probably in the teens or twenties of the twentieth century, judging by style. Most Junior Republic tokens, like the tokens of some other reform schools, could be expected to be found within the fences of the facilities.

## *Ration Tokens*

Ration tokens made of blue or red compressed fiber are still found all over the United States, and similar tokens are still found in Canada. All were used during part of World War II in the rationing system that controlled the distribution of certain types of foods that were in short supply. Paper coupons, stamps, and certificates were the basic tools of rationing, but the "red points" and "blue points" were introduced in 1944 and continued in use until victory in 1945. "OPA" stands for Office of Price Administration. Each token has a pair of letters to either side of the "1." These tokens were given in change for ration tickets for larger amounts. The blue points were for rationed processed foods. There are twenty-four different letter combinations of the blue tokens, which are not as common as the red points.


**Figure 5.92.** Blue Point ration token, 1944, 16 mm.


**Figure 5.93.** Red Point ration token, 1944, 16 mm.

The more common red points were for meats and fats. There are thirty different letter combinations on the red tokens. No one has been able to explain the exact significance of the code letters, but they are assumed to have been control marks that allowed staff to keep track of production and distribution. Many minor bureaucratic points were shrouded in secrecy during the war, but of so little general interest that no one bothered to include them in memoirs after the fact. The significance of these letters appears to be such a point. In dry areas, blue and red points may still be in identifiable condition for some years to come.

## *Sales Tax Tokens*

During the 1930s, as state governments desperately tried new tax sources to deal with the effects of the Great Depression on state revenues, many states enacted sales taxes. As some prices drop even as most prices rise, it is always difficult to translate the value of a dollar in a previous year, such as 1932, into today's dollars. A useful rule of thumb is the 15-to-1 ratio. One dollar in 1932 had a value somewhere in the neighborhood of fifteen dollars in 2016. So when we realize that a 2 percent tax on a purchase of ten cents meant collecting two mils, we

should think of it in present terms as being a tax of three cents on a purchase of $1.50, and we will get the flavor of the transaction. But there was no one-mil or two-mil coin when the sales taxes were enacted, and there was considerable demand among a cash-poor population for avoidance of overcollection of taxes. Charging a one-cent tax on a dime purchase would have been overcollection by a factor of five.


**Figure 5.94.** Sales tax tokens, 22.5 mm, 23 mm.

Minting money is a constitutional prerogative of the federal government, specifically of the Congress. Individual states may not produce their own money. But the states needed to be able to collect tax in amounts much smaller than a cent. The solution was the sales tax token, good for between one and five mils. Even before the first few were produced, lawsuits and federal complaints ensued, and it took about two years to resolve the question of their legality. However, in twelve states, at various times from 1933 to 1961, sales taxes were collected with state-issued tokens. A few states had only privately issued tokens used by merchants to avoid overcollection. Bowing to federal law, each state made some effort to avoid "coin-like" tokens and some were square, holed, or of other shapes distinct from the normal round shape of US coins. The 1935 token from Washington State didn't even bear a denomination; it only said that it was good for the tax on purchases of ten cents or less. But the tax rate was 2 percent, meaning that it paid a two-mil tax (Malehorn and Davenport 1993:305). The Utah 5-mil token had a star cutout.

After the question of the legality of the sales tax tokens was settled, a few states issued tokens that looked very much like coins. Arizona and New Mexico, both mining states whose officials were dedicated to the use of copper for anything possible, made some of their tokens out of copper alloys. And some of them are quite attractive, and quite coin like. The 1935 five-mil token from New Mexico bears the eagle of the state seal on the obverse, and the ancient "four directions" sun symbol from Zia Pueblo on the reverse, as seen on the state flag (Malehorn and Davenport 1993:193).


**Figure 5.95.** Copper New Mexico tax token, 15 mm.

In theory, the tokens could only be used for the payment of sales taxes. In some states, they were used grudgingly if at all and then dropped after people refused to carry them. In response merchants developed systems of bracketing, effectively rounding off the tax, either up or down, to the nearest whole cent. This was the case in Illinois, for example. In some other states, the distinction between the tax tokens and coins was blurry, and the one, two, and 5-mil tokens were treated as coins, and accepted by most merchants for small purchases.

One of the authors recalls being told by three older brothers, who had visited Arizona, New Mexico, Utah, and Colorado in 1949 about the small coins good for amounts less than one cent that were used in other states. One-mil coins particularly struck the brothers' imagination, but they reported that five-mil coins were more commonly used.

In some states, the sales taxes went into effect before state tokens were issued, and various coupons, cardboard slips, and privately minted tokens were used. In Illinois, chambers of commerce and other civic organizations filled the gap in particular towns. For example, the Anna Chamber of Commerce issued a quarter-cent token that was used throughout Union County in 1933 (Malehorn and Davenport 1993:90).


**Figure 5.96.** Illinois tax token, 16 mm.

In some places, merchants issued tokens good for the tax due on purchases of a particular size, or of specific merchandise. One example from Louisville, Kentucky from 1936, issued by Arctic Ice Company, was for the 1.5-mil tax on a purchase of five cents worth of ice, reflecting a 3 percent sales tax rate (Malehorn and Davenport 1993:113).


**Figure 5.97.** Ice token from Kentucky, 15.5 mm.

## *Labor Counters*

### Picker's Tokens

Picker's tokens are used by the owners of big farms as tallies to keep track of the work of harvesters. Workers are given a token when they turn in one box, one crate, one basket, or whatever

the normal measure may be to the tallyman at the wagon or truck. Some farms used tokens of higher value to substitute for a number of smaller tokens. Usually, the farmer pays the worker when the tally tokens are presented. But in some cases, a third party, such as a bank, does the paying. The Duenweg State Bank undertook to pay workers who brought in pickers tokens from the strawberry farms in the area around this lead and zinc mining town in Missouri. The tokens bear "denominations" in volumes of strawberries, such as "one crate / 24 quarts." The bank would pay the workers at the going rate for a quart.


**Figure 5.98.** Missouri strawberry pickers token, 35 mm.


**Figure 5.99.** Alabama strawberry pickers token, 24 mm.

Strawberry farmer E. C. Lee of Conecuh County, Alabama, used picker's tokens early in the twentieth century, of which the fifty-quarts token was the highest. There is a contrast between the practice in Conecuh County of counting in multiples of tens and the Duenweg practice of counting by dozens.

John Sulkoski (1878–1942) raised blackberries and other berries in the Puyallup area of Washington State during the first half of the twentieth century. He and his wife Julia also raised children, five sons and seven daughters, and some of their descendants are interested in family history, so voluminous information on the family is available online. Also available on the Internet are several lengthy discussions among mostly elderly former residents of berry farms in Oregon and Washington, from which it appears that a crate of berries included twelve boxes of about one quart each (though some farms did it differently). The token for "6 boxes" from the Sulkoski farm is the most common and represented the lowest quantity. Other Sulkoski tokens are known for one crate, five crates, ten crates, and twenty-five crates. The six-box token represented half a crate. Note the contrast between the Missouri strawberry crate of twenty-four quarts, and the Washington State blackberry crate of twelve quarts. The reminiscing berry pickers from the Northwest remember doing the work as children when this was still legal, and this may help explain the smaller crates.


**Figure 5.100.** Blackberry pickers token, 25 mm.

### Cannery Tokens

Cannery tokens often bear only initials, with or without numbers, as they did not circulate outside the factory, and everyone in the factory knew exactly what they were. The token with W.T.A. & S. is from Cambridge, Maryland, and represented one bucket of peeled tomatoes. Walter T. Andrews and Sons operated a tomato cannery from 1934 to 1971 at Cambridge, Maryland. A check of newspaper records shows that they were indicted for fourteen child-labor law violations during 1940 and 1941 and were convicted on some of the charges, so it appears that their workforce was younger than some.


**Figure 5.101.** Token for peeling a bucket of tomatoes, 21 mm.


**Figure 5.102.** One bucket token of Filice & Perrelli, 24 mm.

While Gilroy, California, brings garlic to mind (they hold an annual garlic festival), the canneries still to be seen there also process other vegetables and fruits. The "B" token from Filice & Perrelli Canning Company apparently represented one bucket of tomatoes (Kappen 1976:148).

The token inscribed "T. C. Co. 4" was used in the Tuhey Canning Company plant at Muncie, Indiana, which opened in 1899. This style of token was common in the Midwest during the 1890s, and this token was probably one of the first ones made for use in the cannery. The "4" probably signified the peeling of four quarts of tomatoes. Even numbers like 2, 4, 8 and even 16 are often seen on canning tokens and picker's tokens, as traditional measures of volume progress in even multiples. A token for four quarts is much more likely to be produced than a token for three or five quarts.


**Figure 5.103.** Token for peeling four quarts, 21 mm.

Here is the identification process for this token. First, a maverick identification reference indicated that this token came from Muncie, Indiana (with no details). The style indicates a date of about 1890 to 1910, as well as confirming the token's Midwestern origin. The "4" made it very likely that the piece was a piecework token, and "T. C. Co." could be deciphered as the T. . . . . Canning Company. A search engine was employed, and looking through various pages that mentioned canning plants in Muncie in the 1890–20 time period turned up a list of canning plants in an old agricultural reference from 1917. It listed only one Muncie plant whose name began with a T, Tuhey. The founder of the plant, Edward Tuhey, turned out to be a two-time mayor of Muncie (whose son also later served two terms), and the family is very well documented. A site listing graves in the cemeteries of Muncie showed him and his son, and his son's wife, among others. A grave listing on www.findagrave.com had a short biography of Edward Tuhey's son, who had also run the cannery with his brother after his father's death; the biography mentioned the date when the cannery opened. Brief glances at several dozen other sites that mention the various members of the Tuhey family and their businesses confirmed the information several times over. The identification could be considered almost certain, and that is usually as good as any identification of a maverick token gets.

### Spoolers Checks

Spoolers checks were issued for a specific kind of piecework in a cotton mill, and are found with various numbers on them, representing the number of spools that were wound with thread and placed in position at the looms. The token with a large "6" on the reverse, with "Jackson Mills Spooler Check" on the obverse, appears to have been used at Jackson Mills at Iva, Anderson County, South Carolina, during the period before World War I.


**Figure 5.104.** South Carolina spooler check, 28.5 mm.

Jackson Mills built a village at Iva that housed 1,500 people in 150 houses, the families of some 225 mill workers, who subsisted on total pay of $73,000 a year around 1906. The daily average pay was thus about one dollar, though some would have been paid less and some more. Depending on the size of the house, each family paid rent of seventy-five cents or one dollar per week. On such a budget, every cent counted. Further research would be needed to assign a contemporary dollar value to this spooler check, and the value could have been adjusted by the company in an effort to speed up the work or change the piece rates. But it certainly had a substantial value to the worker. Many other kinds of piece rate checks or tokens exist, for picking grapes, shearing sheep, shucking clams, cutting wood, and so on.

## *Transit Tokens*

### Bridge Tokens

Bridge tokens predate European settlement in the Americas, but by the early 1800s some tokens were used on some North American bridges due to the scarcity of small change. At the present time, bridge tokens are being replaced by electronic ways to collect tolls, but the artifacts themselves will linger, and some will be found centuries from now, where they have been dropped or discarded.

The Delaware River Joint Toll Bridge Commission, with authority shared between Pennsylvania and New Jersey, introduced the brass "bridge token" to pay for "one passage" in 1970. The only date given on the token is the foundation date of the commission, 1934. The first edition was from the Franklin Mint, which struck just over five million. The second edition of three million, with a tiny "mem" mintmark that looks a little like a mountain under the date 1934, was from the Mount Everest Mint. This example is from that second edition. Later mintages were made without a mintmark. With so many millions in circulation, at least a few hundred thousand must have entered the soil of Pennsylvania and New Jersey already.


**Figure 5.105.** Delaware River bridge token, 19 mm.


**Figure 5.106.** Bridge and tunnel "100" token, 29 mm.

The Triborough Bridge and Tunnel Authority, a branch of the Metropolitan Transit Authority in New York City, raised some bridge and tunnel fares in August 1980 and had a "100" token struck to pay the new one-dollar fare. It paid for passage over the Verrazano Bridge, the Triborough Bridge, the Bronx

Whitestone Bridge, and through two tunnels. Different tokens were made in 1982 after a fare increase to $1.25. The "M" above the "100" is the emblem of the Metropolitan Transit Authority. The bridge on the obverse is above a symbolic representation of water, and under the water are two tunnels.

### Ferry Tokens

Ferry tokens are the successors to the coins used to pay ferrymen in ancient times, and myth and commercial reality intersect in the ancient Greek and Roman practice of placing coins on the eyes of the deceased to pay Charon passage on the ferryboat to Hades. Yes, in many Old World burials, archaeologists have really found coins left on the eyes of the deceased, but this practice (while known) never became common in America. The first North American ferry tokens came into use in the early 1800s, and tokens became common for ferries in the early 1900s. Just one example of the hundreds of North American ferry tokens is shown here, good for one fare on the Terminal Island ferry operated by the City of Los Angeles Harbor Department. This municipal ferry token became obsolete in 1963 when the Vincent Thomas Bridge was built. Most North American ferries have been replaced by bridges. Terminal Island was renamed in 1893, having been previously known as Rattlesnake Island.


**Figure 5.107.** Los Angeles ferry token, 20.5 mm.

### Toll Road Tokens

Toll road tokens from Europe are known from much earlier times, but American toll road tokens were introduced in the early nineteenth century. From somewhat-cleared, mud-and-rock roads to corduroy roads (made of split logs laid sideways to traffic), toll roads became very common, and some used tokens. With the advent of the automobile, improved roads between cities became common in the more populous parts of the East before 1910, and they spread to the West during the 1920s. Traffic congestion was a constant complaint, particularly at intersections. In some states, public funds were used to build highways with on-ramps and off-ramps beginning in the 1930s, while other states used private funds or a mix of public and private funds to build automobile highways requiring tolls. Astonishing intercity speeds of 20, 30, and even 40 mph could be achieved on such roads. Several Eastern states still require tolls on major highways, though most have recently shifted to collection of tolls through electronic transponders. A toll token for the Connecticut Turnpike, issued in 1982, carries the coat of arms of Connecticut on the obverse, with a state outline map and "Connecticut Turnpike, good for 1 fare" on the reverse (see below).

In Norfolk, Virginia, the Virginia Beach Expressway opened at the end of 1967, and tokens were made in early 1968. The expressway was renamed in 1974, so these tokens were used for no more than six years.


**Figure 5.108.** Connecticut Turnpike toll token, 22 mm.


**Figure 5.109.** Virginia Beach Expressway token, 19 mm.

### Railroad Tokens

Railroad tokens were first used for horse-drawn carriages that ran on rails. This example from Oakland, California, paid the fare in 1871 on the Oakland, Brooklyn, and Fruitvale Railroad Company streetcars, horse-drawn vehicles running between communities that are all now part of Oakland.


**Figure 5.110.** Horse-drawn railway token, 1871, 88 mm.

Steam-powered railroads traveled between towns but were relatively unusual in cities. Electric railways came later, starting in 1888. The Fonda, Johnstown & Gloversville Electric Railroad Company operated about forty miles northwest of Albany in upstate New York. The tokens were issued in 1929. Additional quantities were ordered for use as late as 1948, even though the electric streetcars were abandoned in 1938, and replaced with buses.


**Figure 5.111.** New York railroad token, 1929, 19 mm.

It was common for fare tokens to be used when the fare was an uneven amount, such as three cents or seven cents, but go unused when the fare was five cents or one dime, and coins could be used instead. In some cities, tokens could be used for their fare value at helpful stores, so they circulated as an adjunct to the national currency. When fares changed, some lines continued to use the same tokens, but others changed the tokens in some way with each change in the fare.

The New Bedford and Onset Street Railway Company began operations in 1901 in Massachusetts Its rails ran from the Rhode Island border along the coast of Buzzards Bay to the west end of Cape Cod. At first, they used tokens with holes. Some years later, tokens of similar design but without holes were issued when the fare increased.


**Figure 5.112.** Railway token, 19.5 mm.


**Figure 5.113.** Washington, DC, Joint fare token, 15 mm.

In Washington, DC, where the Washington Railway and Electric Company and the Capital Traction Company had been bitter rivals for years, they issued a joint fare token in 1920, sold at the current fare for use on both lines. It has the abbreviated names of both companies on the obverse, with the cutout W in the center standing for "Washington."

Not all cutout designs were letters. In Salt Lake City in 1926, the Utah Light and Traction Company issued a token signed by the company treasurer, George B. Thomas, which featured a cutout design of a beehive, symbol of the state. These tokens were replaced in 1937 with new tokens of the same design bearing the signature of the new company treasurer, R. H. Jones.

**Figure 5.114.** Token features beehive cutout, 23 mm.

## Bus Tokens

Bus tokens, especially early ones, often bore images of buses, usually buses that had been in use some years before the particular token was issued. The Rockville Centre Bus Corporation token from 1946, used in Nassau County on Long Island, bears the image of a bus from about 1930. The image was first used by the token manufacturer in 1936 on tokens used in other cities.


**Figure 5.115.** Long Island bus token, 19 mm.


**Figure 5.116.** Alabama bus token, 1949–56, 22 mm.

A very similar image of a bus appears on the Montgomery, Alabama token used from the end of 1949 through the first days of 1956. It was one of these tokens that Rosa Parks put in the fare box before sitting down in the front of the "colored section" of a Montgomery City Lines bus on December 1, 1955. When she was ordered by the driver to move farther back to make way for a white passenger, she refused, which led to her arrest and to the Montgomery Bus Boycott. The boycott was so effective that all the non-whites in Montgomery, some three-quarters of the bus line's passengers, refused to ride. This unleashed a reign of terror on the boycotters by local and state officials that stopped only well after the struggle was won through a US Supreme Court decision in late 1956. Another reaction to the boycott was a raise in bus fares so that the now white-only line could avoid bankruptcy. This token was replaced by a smaller one representing a higher fare in January of 1956. Although the token bears no date, its six-year period of use can be firmly dated.

A much more realistic and up-to-date view of a bus—or rather, two buses—is on the Cincinnati Transit token from


**Figure 5.117.** Cincinnati Transit full fare token, 16 mm.

1970. Students rode at half fare, and this token was for full adult fare.

### Parking Tokens

Parking tokens for businesses appear to have come into use in the 1930s. The end of the 1930s is believed to be the period when the parking token for the Whiting Motor Hotel was used in Stevens Point, Wisconsin. Such tokens were often used at attended parking lots, provided to hotel guests so that they would not need to pay for parking that was provided to others for money.


**Figure 5.118.** Whiting Motor Hotel parking token, 22 mm.

Later on, when standard tokens were developed by distributors of automated parking lot equipment, the equipment companies would strike their stock token with the addition of the name of the business operating the parking lot. The example with the parking-lot gate says "Skinner Clinic" on it, and was used at that medical clinic in San Antonio, Texas.


**Figure 5.119.** Skinner Clinic parking token, 25 mm.

Social conditions affect parking tokens in many ways, and they reflect mechanization, the conversion of a parking place into a commodity, and even changes in the society's superstructure, its ideas and social attitudes. Two tokens that demonstrate this were used for the same parking lots at a university hospital in Washington, DC. The first, used from the early 1950s, was good for employee parking at Freedmen's Hospital.


**Figure 5.120.** Freedmen's Hospital parking token, 22.5 mm.

The federally owned hospital had been established in 1862 to care for escaping slaves who were streaming into Washington, DC at that time, and in 1863 it was placed under the charge of Dr. Alexander Augusta, the first African American to head a hospital. After the foundation of Howard University Medical School in 1868, while Freedmen's Hospital was still under federal control, it became the teaching hospital associated with the university. It was the only hospital serving the large African American population of Washington, DC during most of the following century. During the 1950s and 1960s, there was controversy over the name "Freedman's Hospital," that some considered branding the patients with their ancestors' previous condition of servitude.

In 1967, the hospital was turned over to Howard University, and continued functioning in the same place until 1975 when it moved to an improved hospital facility a short distance away. In 1967 the parking tokens reflected the new name: Howard University Hospital.


**Figure 5.121.** Hospital parking token, 22 mm.

Tokens of city parking lots, whether operated by the city itself or by a commission or parking authority, became common in the 1950s and 1960s. Some are also good in parking meters along streets. Some are used by most people who park in a particular city, some are used by merchants to entice customers to their stores by providing free parking, and some are provided to people who must park in a particular area by invitation or need, including jurors, witnesses, law enforcement personnel who need access to their vehicles, or city officials. Each city has somewhat different rules and conditions. An example of a token "good only in parking meter" from Anchorage, Alaska, has a potentially misleading date.


**Figure 5.122.** Parking token from 1970, 22 mm.

Under the city seal is the date November 21, 1920. This is the date the city was incorporated. The actual date the token was issued was 1970, half a century later, and it is quite common today. This does not stop one Internet vendor from describing it as a scarce token from 1920 and asking $25 plus $8 shipping! Considering the weather in Anchorage, these tokens must have

been lost in the snow even more often than in mud and sand, and considerable numbers have no doubt become covered by Alaskan soil. A historical archaeologist could go very wrong by accepting the date on the token.

Most manufacturers of parking equipment, including token-operated gates and parking meters, provide stock tokens for use before specific tokens can be ordered for the particular business. Some businesses that operate parking lots just keep using the stock tokens, as they are relatively inexpensive. Card Key Systems Inc., headquartered in Glendale, California, issued the stock "Parcoa Token" for use in the token-operated gates shown on the tokens. They can be found all around the country.

**Figure 5.123.** Parcoa stock parking token, 24.5 mm.

## *Gaming Tokens*

### Gambling Tokens Imitating Gold Coins

On gambling tokens imitating gold coins, spiel-marke is German for "play token." It does not necessarily refer to play by children but often refers to playing with cards. "Composition" before "spiel-marke" is not actually a German word, but it was used by Germans (especially in the United States) to mean something like "base-metal alloy." It warns that there is no actual gold in the token.

**Figure 5.124.** Gaming "composition spielmarke," 33.5 mm.

The token that looks very like a US gold coin of 1850–65 is a gambling token, with the German inscription "Compos. spiel-marke" under the eagle. These were produced quite soon after 1850, and are described in numismatic works as early as 1861. It is unclear where they were struck, but wherever they were made, they were produced by people of German origin, and used in popular German card games roughly the way people use poker chips. They were heavily used in the United States by German immigrants. Smaller similar tokens show George Washington and other American figures, and this argues for an American origin. The motto above the eagle says "in unitate fortitudo," Latin for "in unity is strength." Under the head of Liberty on the obverse is a slightly different description, "Compos(ition) Spiel-Munze," the latter phrase meaning "play money," a phrase familiar from the tiny imitation coins that were given to German children for play.

### Chinese Gaming Tokens

Some, though certainly not all, of the American tokens with Chinese inscriptions were used for gambling. The small hexagonal aluminum piece was used at Mai Chow in San Francisco, where the "2" probably stood for two dimes.


**Figure 5.125.** "Mai Chow" gaming token, 18.5 mm.

The larger copper-nickel gaming token with stylized Chinese characters is from the late 1930s and was used in an establishment in Seattle's Chinatown for a value of one dollar.

**Figure 5.126.** Chinese American gaming token, 38.5 mm.

While the "Lung-Chan" piece in the shape of a traditional Chinese coin is not inscribed in Chinese characters, it bears a Chinese name. Lung-Chan of San Francisco was a major importer and distributor of mah-jongg sets during the 1920s and early 1930s during the first big American mah-jongg fad. This token valued at "50" was included in sets shipped around the United States and substituted for the old Chinese coin that would have been used by a mah-jongg player in China.


**Figure 5.127.** "Lung-Chan" piece used in mah-jongg, 25 mm.

### Fraternal Organizations' Gaming Tokens

It can be hard to differentiate gaming tokens from drink tokens, if no purpose is stated on the token, and both drinking and gambling are known to have taken place on the premises. In the case of fraternal organizations, bar tokens with denominations usually specify "cents" after the number (but there are exceptions). Some tokens bearing a 1, 5, or 10 are just too large to represent that number of cents. For an outsize example, the "5" token from the Huntington Park Elks Club in Southern California must be a gaming token with a nominal value of five dollars, rather than a drink token worth five cents.


**Figure 5.128.** Elks Club gaming token, 33 mm.

### Bookmakers' Tokens

Bookmakers' tokens would be an unusual find in most of the continent, but in Louisville, Kentucky, where tokens tended to be of unusual shapes, some tokens were used by bookies at the famous Churchill Downs racetrack. This example was good for five dollars with H. M. Stevenson, Inc., bookmakers. Many other odd-shaped tokens found in the Louisville area, silent about their purposes, were actually bookies' tokens from the era between World War I and World War II.


**Figure 5.129.** Bookmaker's token, 36.5 mm.

### Card Room Chips

In California and a number of other states, while casino gambling is not legal (with some exceptions for Native American local governments), poker is not technically considered a game of chance, and "card rooms" or "poker rooms" may be licensed by local authorities. To confuse matters, some card rooms incorporate the word "casino" in their names despite not legally being casinos. The Oceanview Poker Room on Pacific Avenue in downtown Santa Cruz, California, uses its chips until they are unreadable, but this two-dollar chip with the common "hat and cane" edge is still mostly visible. When buried, or for that matter when used on card tables for several years, chips of this kind tend to lose their gold leaf in the letters.


**Figure 5.130.** California card room chip, 28,5 mm.

### Casino Chips

Casino chips were (in the United States) a Nevada phenomenon until the Atlantic City casinos opened in 1978. They were based on the poker chips used in private and illegal games but came to be standardized at a diameter of about 39 mm and a thickness of about 3.3 mm. Initials, sometimes intentionally misleading ones, were usually used on the chips of illegal operations, but in Nevada after the 1930s the chips became much more ornate and came to include the name of the casino, and often designs or slogans specific to the establishment. Complexity was one way to make things more difficult for counterfeiters. A Greek border design helped distinguish the chips of the Mapes Hotel in Reno, around 1950 (Campiglia and Wells 2009:226). The ten-cent denomination was usually the lowest.


**Figure 5.131.** Mapes Hotel chip, Nevada, ca. 1950, 39 mm.

Over the years the denominations crept up in response to inflation, and the dollar chip is now usually the lowest. Some chips stay simple in appearance, but most casinos have adopted multicolor designs and incorporated photographs or other detailed images. After many years of actively discouraging chip collectors, most casinos discovered during the 1990s that chip collectors could be a new source of revenue, and long series of "limited edition" chips, usually of a five-dollar denomination, have been issued ever since.

The five-dollar chip celebrating the 20th anniversary of the Imperial Palace in Las Vegas in 1996 has color photographs on both sides. Casino chips are popular souvenirs, as


**Figure 5.132.** Imperial Palace anniversary chip, 39 mm.

well as collectors' items, and some of the chips from Nevada and the later casino states may be found all over the United States and even abroad, brought back from gambling vacations. Fortunately for those who find chips and need to identify and date them, active groups of collectors list virtually all of them on various websites, and fairly comprehensive guides have been published.

### Native American Casino Chips

As a result of complex political, legal, and economic processes, Native American tribal governments gained rights during the 1980s and 1990s to operate casinos offering a wide range of gambling options in many states, even in some that had no other casinos. Standard-size chips with a diameter of about 38 mm are used in the Native American casinos in such games as poker and blackjack. Most such chips originally were fairly plain, like the one-dollar chip from the Big Pine Casino, operated by the Big Pine Paiute Tribe of the Owens Valley. This casino, too far away from any major city to be highly profitable, was open sporadically from May, 1996, to January, 1999, when it closed down.


**Figure 5.133.** Big Pine chip, 39.5 mm.

As the economic gains from the casinos increased, fancier and more colorful chips became more common. The San Manuel Reservation adjoining Highland, California, was established under federal protection for the few survivors after the killing of the great majority of the Yehuviatum clan of the Serrano tribe in the San Bernardino Mountains in 1866. A private army paid by local timber and mining interests spent thirty-two days killing every man, woman, and child they could find in the mountains, roughly 1,500 people. The only survivors were fewer than 100 people; some were led out of the mountains by Paakuma (Santos Manuel), others simply were out of the area at the time of the massacre. This remnant of the tribe sought protection from a US Army unit in San Bernardino, which was reluctantly granted, and were allowed to live at Arrowhead Springs until 1891 when they were forced to move to a steep, bare, waterless square mile in the foothills.

The Serranos on the reservation were the poorest of the poor in San Bernardino County until 1986 when they set up the bingo hall that started their gambling project. Within two decades, they became one of the largest employers in the area, built actual houses instead of old trailers for their members to live in, and had begun to buy back sacred sites in the mountains above the reservation. They also make large donations to local charities and for civic projects. The multicolor five-dollar chip with the tribal emblem was introduced in the early 1990s, and this chip design was replaced in 1994 with a revised seal, inscribed "San Manuel Indian Nation, Founded 1891." The casino is closer to Los Angeles than any other and continues to contribute to Yehuviatum prosperity.


**Figure 5.134.** San Manuel gaming chip, 39.5 mm.

The movement of people from the far north to California goes back a long, long time. Several Athapascan groups ended up in California after long journeys south thousands of years ago. The Cahto people of Mendocino County in Northern California spoke Wailakina, an Athapascan language, back when there were some 1,100 of them living in fifty small villages around 1700. There are now about 52 voting members of the Cahto tribe on 202 acres of reservation land at Laytonville. Their hopes of economic and cultural revival are boosted by the Red Fox Casino where the five-dollar chip with the fox head is used. The casino is close to Highway 101, the main route from the San Francisco Bay Area to northwest California and coastal Oregon.


**Figure 5.135.** Red Fox Casino chip, 39.5 mm.

### Shipboard Casino Chips

Though a few forerunners go back to the 1930s, most shipboard casino chips date from the 1970s onward. A good question, likely to be answered over the next few decades, is where such chips will be found in the archaeological record. Low-value chips that happen to make it home in pockets and suitcases are probably most likely to enter the archaeological record through children dropping them while playing. The evolution in developed countries of mass tourism for the working class means that chips from big ships that carry many tourists on short cruises, like the one-dollar token used on the ships of the Princess line, will be found in more neighborhoods as time goes on, farther down the economic ladder than when cruises were only for the rich.


**Figure 5.136.** Princess Cruise shipboard casino chip, 39 mm.

### Slot Machine Gambling Tokens

Slot machine gambling tokens were used beginning in the late 1800s and became extremely popular by the turn of the twentieth century. Such machines originally paid out tokens that were good for a certain amount of money, and the most popular denomination was five cents. In many machines, a copper-nickel five-cent coin could also be used. The machines were used in bars, cigar stores, pool rooms, and billiard parlors, as well as in some towns in drug stores, feed stores, and just about anywhere a counter could be found on which to place one. But such open gambling attracted opposition, and the inevitable crackdowns generated new games and new forms of tokens. New laws at the state, county, and city levels forced an end to (open) payouts in money. In Baker City, Oregon, when local officials cracked down on the use of tokens specifying a cash amount, The Richelieu obliterated the denomination on its five-cent tokens and stamped them with a large "R" for Richelieu. At the same time, this same counterstamp was used to identify anonymous stock tokens as being usable at The Richelieu. As Baker City had many bars and game rooms that used tokens, the identifying mark kept players from winning tokens at one place and cashing them in at another.


**Figure 5.137.** Richelieu counterstamped slot token, 21 mm.

New machines were invented frequently, and several major manufacturers produced nothing but game machines. The games became more complex, though the chief reason for playing continued to be winning, and getting a payout in tokens. Charles Fey of San Francisco introduced the Silver Cup countertop machine in 1912, and the stock tokens with a cup were used in hundreds of towns and cities (Alpert and Smith 1984:55).


**Figure 5.138.** Charles Fey silver Cup token, 23 mm.

Paces Races was a big console game machine from Chicago from 1934, for which the Pace manufacturing Company provided stock tokens featuring horses (Alpert and Smith 1984:82). This type lasted until World War II, but the war caused interruptions in game machine production and distribution due to the shift of basic materials and skilled machinists to war work.


**Figure 5.139.** Paces Races token, 23 mm.

Early on, changing laws in many jurisdictions required that the payout be changed (at least officially) to merchandise instead of cash. The Marquette was a large floor model of gambling machine made in Chicago from 1899 to 1905 (Alpert and Smith 1984:79). This token specified a payout in cigars.


**Figure 5.140.** Marquette slot token, 20.5 mm.


**Figure 5.141.** New Jersey "Coin Castle" token, 24.5 mm.

A much later token from the Coin Castle in Seaside Heights, New Jersey, specified a payout in cigarettes (Alpert and Smith 1984:170). As playing more complex and interesting machines came to be a popular activity pursued for pleasure rather than the chance of cash, and as legal crackdowns became more effective, promises of rewards became less common. Machine tokens that were entirely blank did not mention or imply a value, or promised a payout only additional games became the norm. The "for amusement only" and "no value" tokens and later amusement and video tokens are dealt with later in this section, under "Amusement tokens." Amusement machine tokens of all kinds, including gambling machines but excluding casino machine tokens good for cash, are listed in *Video Arcade, Pinball, Slot Machine, and other Amusement Tokens of North America*, by Stephen P. Alpert and Kenneth E. Smith (1984).

### Casino Slot Machine Tokens

Operators of legal slot machines in the casinos of Nevada found that nothing compared to the sweet music of a cascade of silver dollars to induce gamblers to put more money back in the machines. Silver dollars from the 1870s through 1935, as well as more recent half-dollars and smaller change, saw intensive use in Las Vegas right up until the rising silver price took all silver coins out of circulation by 1965. The response to this gambling crisis, starting in 1964, was the minting of special tokens for use in particular casinos. The tokens were made of copper-nickel to

mimic the color of the silver dollars. After 2000, most casinos went to machines that use banknotes, paper tickets, or plastic cards, but many of the machines still play a loud recording of a cascade of tokens every time the player wins. The slot machine token from the Silver Slipper in Las Vegas, with a reproduction of the sign above the casino on the obverse, was issued in 1966.


**Figure 5.142.** Silver Slipper dollar slot token, 1966, 36,5 mm.

There was a brief hiatus in token production for most casinos from 1971 through 1977, as the Eisenhower dollar was issued by the US Mint. After that, however, came a flood of new tokens, including the 1979 issue of the Bonanza Saloon, a Virginia City casino, showing a high straight with the ace of spades.


**Figure 5.143.** Bonanza Saloon token, Nevada, 37 mm.

In 1978 Atlantic City, New Jersey, became the second location with modern legal casino gambling in the United States. The machine tokens used in their first modern casino, Resorts International, were unusual in that they were the size of a chip, 39 mm. Later tokens of this and other Atlantic City casinos reverted to standard silver dollar size, 36–37 mm in diameter.


**Figure 5.144.** New Jersey slot token, 1978, 40 mm.

During the 1980s and later, gambling casinos were legalized in state after state, though non-Native American casinos are still not legal in most states. Noncasino card clubs or other venues limited to such "games of skill" as poker are legal in many other states. Some additional states now have legal casinos, but the first to jump on the bandwagon were South Dakota in 1989, Colorado in 1991, and the "riverboat states" of Iowa (1991), Illinois (1991), Mississippi (1992), Louisiana (1993), Missouri (1994), and Indiana (1995) that allowed certain types and number of casinos by legislative action or by popular vote. In the "riverboat states," casinos were generally only legal if they were located on boats in a river or the Gulf of Mexico. However, each boat was at permanent anchor in a little man-made inlet from the river or at a big dock on the gulf. The gangways were disguised as a grand entryway, so the casinos looked and felt land based, that is, until a hurricane comes along; as they were technically floating.

The Grand Casino Biloxi used a one-dollar token when it opened in 1993. Later tokens and chips were used over the years until August 29, 2005. On that date, Hurricane Katrina came ashore, killed fifty-three people in the town, and destroyed 80 percent of the buildings in Biloxi, including the casinos. The Grand Casino was broken up and washed hundreds of meters inland, and many of the chips and tokens were never found. They had entered the archaeological record, and at some time in the future some may be discovered in strata that will thus be datable to an exact day. After the disaster, Mississippi law was changed to allow casinos to be built on the ground—preferably high ground—rather than on barges.


**Figure 5.145.** Grand Casino dollar token, 37 mm.

### Native American Casino Tokens

Native American casino tokens were fairly plain in the beginning, but more ornate and often more "indigenous" designs became popular toward the end of the 1990s and into the next millennium, though most casinos have discontinued metal tokens over the last few years. The one-dollar slot machine token from the Sky City Tribal Casino at Acoma, New Mexico, shows an Acoma pot and the emblem of the Acoma Pueblo. Acoma is one of the oldest continuously inhabited places in the United States.


**Figure 5.146.** Sky City slot token, Acoma, 37 mm.

### Shipboard Casino Tokens

Shipboard casino tokens (for oceangoing vessels, not riverboats) often include tokens with face values of five to fifty cents, as well as the dollar tokens. As the ships are often on the high seas or abroad, and are generally owned by companies that are not based in North America, maintaining a supply of US coins is not always easy. Their solution is to produce tokens roughly the sizes of the US coins and keep them on hand in the ship's casino. The nickel-sized token of the Holland America Line with a "5" on the reverse is a shipboard casino token for five cents. It has the mintmark of the Roger Williams Mint in Massachusetts.


**Figure 5.147.** Holland America Line slot token, 21 mm.

It was reportedly in use on a Holland America Line ship in 2007, so it was probably made after the turn of the millennium. The Roger Williams Mint ceased operations in 2006 after being caught in a massive counterfeiting operation related to making excellent fake Canadian transit tokens. Some of its dies may be used by Tokens Direct that bought the remnant of the business.

### Billiard Tokens

Billiard tokens were often marked with a value of "2½" cents, and many tokens that do not state "billiard" on them but bear a value of "2½" cents were used for billiards. The token from Dothan, Alabama, carries the name of the Pastime Billiard Parlor.


**Figure 5.148.** Pastime Billiard Parlor token, Alabama, 25 mm.

As prices went up, or in establishments on a higher economic rung, billiard tokens that bore values often went up to a full five cents. The Basement Billiard Parlor of Pomona, California, issued a red fiber five-cent token that must have been produced in 1943 when token metals were unavailable (Kappen 1976:371).


**Figure 5.149.** California billiard token, 1943, 28.5 mm.

### Pool Hall Tokens

Pool hall tokens bore substantially higher values than billiard tokens. The pool token from Kiley's Pool Hall in Long Beach, California, appears to be from the 1930s and states a value of twenty-five cents in trade—that is, for playing pool (Kappen 1997:191).


**Figure 5.150.** Kiley's Pool Hall token, 30 mm.

## *Admission Tokens*

### Beach Admission Tokens

In some states, such as California, Oregon, and Texas, everyone has the right to walk on the beach, generally up to the high-tide line, and private property may not extend down to the water line. In some other states, much of the beachfront is privately owned, and the public can be excluded. In order to provide some access to beaches in states where most of the beach is privately owned, the owners of some beaches allow access to those who pay a small sum for the day, join a club to which annual dues are paid, or who live in houses or hotel rooms that come with beach rights. When access is allowed by a locked gate that can be opened with a token, special tokens are used. The token from Easton Beach at Newport, Rhode Island, is for the use of "residents," though whether permanent or temporary is not specified.


**Figure 5.151.** Easton Beach admission token, 16 mm.

Another kind of beach admission token is kept on the person of the beachgoer, usually on a string around the neck or attached to a bathing suit. This kind may be issued for a day or for a season, and its number is recorded with the name of the person to whom it is issued. Winnetka, north of Chicago on the shore of Lake Michigan, still requires even city residents to pay for beach access. The aluminum beach pass was valid during 1948.


**Figure 5.152.** Winnetka, 1948, beach pass, 31.5 mm.

### Skating Rink Tokens

*Hippos* is the Greek word for "horse." Hippodrome once meant a racecourse for horses, but in the early 1900s it became a popular name for skating rinks. In Southern California back when refrigeration was expensive, this meant roller skating rather than ice skating. The Hippodrome Skating Rink in Long Beach, California, where this token (Kappen 1976:213) was good for ten cents in trade later fell out of use and was turned into a senior center. Later still, it became the Museum of Latin American Art, as it is today.


**Figure 5.153.** Hippodrome skating token, 24 mm.

### Amusement Tokens

Amusement tokens without stated values, even in merchandise, were first issued for slot machines as legal crackdowns suppressed gambling machines in bars, restaurants, barber shops, and cigar stores in city after city. During the long period from the 1890s through the 1950s, there was a constant struggle waged between competing amusement machine manufacturers, and between the manufacturers and distributors of the machines and the state and local authorities that enforced stricter and stricter antigambling laws. By the late 1940s, most of the machines provided amusement through games of "skill" rather than a chance at a random jackpot. An example of a token from the end of this period is one from a pinball parlor in Minnesota, the Gateway Inn in St. Paul (Alpert and Smith 1984:116). It shows no indication of value. This is typical of the hundreds of different tokens used at pinball parlors between the 1930s and early 1960s in the Minneapolis-St. Paul area, a very token-rich locality.


**Figure 5.154.** Pinball token, Gateway Inn, Minnesota, 21 mm.

During earlier parts of the process, anonymous tokens were used to avoid handing the authorities evidence of prohibited behavior. The phrasing drew fine legal lines. The token that was "good for free play on machine" was only awarding more play, an insubstantial thing compared to money or merchandise, and less liable to subject the game room proprietor to prosecution. Of course, in many establishments, money was paid for jackpots privately, in exchange for the tokens.


**Figure 5.155.** Free-play token, 30 mm.

As a further way to distance the parlor owner from the behavior of the guests, some tokens disclaimed any ownership of the token on the part of owner or guest. While this token was "good for one free game," that is, for no material prize, it was stated to be "loaned" rather than owned by the player, and the curious claim was made that is was the "property of machine." There are hundreds of different tokens that claim to be the property of machines. Most cannot be pinned down to particular localities but were used in many states.


**Figure 5.156.** Free game token, 20 mm.

The production of more and more complex games continued through the 1960s and 1970s, until by the end of the 1970s video games were definitely established as something for which one paid, rather than a type of gambling with any chance of reward. A 1978 token from Chuck E. Cheese's "Pizzatime Theatre" in San Jose, California, is a classic example of a video token, though some of Chuck E. Cheese's games did not use video (Alpert and Smith 1984:58).


**Figure 5.157.** Chuck E. Cheese token, 1978, 25 mm.

The pizza/game chain later used a single design for each year in all its stores, and has continued to place dates on the tokens as of this writing, though some are also found without dates. In all, there are hundreds of varieties just from this one chain. Video game development accelerated toward the end of the millennium, and computer-run games became tremendously popular worldwide during the 1980s and 1990s. After 2000, game tokens headed for obsolescence as electronic cards operated the machines instead of tokens. But during their florescence, video game parlors created more tokens in some states (and many countries) than all previous tokens issued in their history. In China, one of the two places where coins started some 2,600 years ago, all types of Chinese coins and tokens in all previous history may have been outnumbered by the types of video game tokens issued between 1990 and 2005. Not only in China, but also in North America and elsewhere, future archaeologists may regard certain strata as dating from the video token era.

### *Erotica Tokens*

Erotica tokens are a subset of amusement tokens, generally used to activate machines showing films or videos with erotic content in establishments devoted to such activities. For an illustration, the very least erotic of all erotica tokens is shown: a design consisting of the name of the establishment, "Erotica," and an address on 42nd Street in New York City together with the words "non-refundable." Many erotica tokens feature racy sayings, female (and in some cases male) figures, and in a number of cases illustrations of couples involved in particular sexual acts, often in series.


**Figure 5.158.** New York erotica token, 25 mm.

## *Miscellaneous Machine Tokens*

### Scale Tokens

Some scale tokens paid to weigh a human, others paid to weigh a truck. The city scales in Fargo, North Dakota, would weigh "one load" in return for the token with a round hole in the center. This token is believed to have been in use after World War II.


**Figure 5.159.** Scales token, Fargo, North Dakota, 28.5 mm.

### Laundry Tokens

Washing machines and driers at thousands of laundromats have been operated by tokens, whether specific to the establishment or made as a stock token by the manufacturer. The small "metered laundry equipment" token from the Appliance Operating Corporation, probably used in the 1950s, was distributed from company headquarters in New York to laundromats that installed their equipment.


**Figure 5.160.** Metered laundry equipment token, 18 mm.


**Figure 5.161.** Laundry token with a Scots elephant, 24 mm.

A small chain of laundromats in Ohio used a token around 1960 that featured a Scots elephant, surely a distinctive mascot. The reverse is inscribed with "Good only in metered washers at Nite n' Day Launder Center," and the obverse features the name of the laundromat and an elephant who appears to be wearing both a plaid tam-o'shanter and a small crown atop the cap. The crown would stand for the first position in the land; the plaid cap associates the elephant with thrift, supposedly a Scots virtue; and the elephant is smiling, which is the proper way to welcome new customers. While the token is listed with TokenCatalog.com as having been used in Cincinnati, newspaper advertisements in Ohio newspapers of the first two months of 1960 indicate that the firm was based in Cleveland, and selling franchises across Ohio. The example in the photo posted on TokenCatalog.com has a capital "A" in the raised dot below the elephant's mouth, but this example has a capital "B" in the same spot. There are other possible reasons, but one possibility is that this is a coded reference to the franchise that issued the particular token.

### Car Wash Tokens

Car wash tokens include many generic tokens without any information on the car wash, or even any connection to the manufacturer or the chain. But more interesting, and more useful in understanding the place and time when the tokens were used, are the tokens of specific manufacturers of token-operated car wash equipment.

Ryko is such a firm, and the very distinctive Ryko tokens may be found in most states. Founded in 1973, Ryko had many token-operated car washes in operation by 1980, and their equipment is in use in many countries today. One of the standard Ryko tokens says "Ryko car wash" inside a circle on each side. There are other designs, and some tokens have additional markings. This particular token has a mint mark "A" within the top of the circle on each side.


**Figure 5.162.** Ryko car wash token, 30 mm.

Some car wash tokens use a stock die for the reverse, with a distinctive design for the specific location on the obverse. Some are more distinctive than others. The restrained design for the Paso Robles Self-Service Car Wash just used letters to give the name of the California car wash.


**Figure 5.163.** Self-service Car Wash token, 24 mm.


**Figure 5.164.** Horse-friendly Norco shows both ends, 25 mm.

Norco, California prides itself on being horse friendly, and a network of horse trails crisscrosses the city. So when a local car and truck wash had a supply of tokens minted in the early 1990s, a horse theme was likely. However, few tokens are quite as thorough in depicting both ends of a horse. Truckers who enjoyed the token took it all over the country, and it may now be found anywhere.

## Gasoline Vending Tokens

In an attempt to reduce the labor needed to run a gasoline station, several Southern California station owners turned to token-operated self-serve gasoline pumps during the 1960s (after a few forerunners during the 1950s). Cal Stores operated a large chain of stations, including Store #551 at Carson and Paramount in Lakewood (Kappen 1997:177). Token-operated gasoline pumps became less popular as self-serve pumps became the norm, gasoline prices rose sharply, and safety regulations tightened. The final death knell for the gasoline token was the introduction of pumps operated by credit cards and later by debit cards.


**Figure 5.165.** California gas token, 32 mm.

## Compressed Air Tokens

While similar struggles occurred in other states, the California experience regarding the provision of compressed air for tires may be instructive. As self-serve gasoline pumps became the norm, and most "service stations" stopped providing mechanical services for cars, station owners stopped providing free compressed air for tires. Some stations removed their air compressors, while others began charging for air. The California State Legislature received many complaints, and some legislators were advised by Highway Patrol and local police officers that the difficulty in finding compressed air for tires was leading to unsafe road conditions, as many drivers failed to maintain their tires properly. There ought to be a law, many said. And so there was. The state adopted legislation, popular in a state almost entirely populated by motorists, that required the free provision of compressed air to any paying customer of any station with an air compressor. One system that followed at some stations was a continued attempt to collect money for compressed air, but tokens were available for the use of those buying gasoline. Most such tokens are generic, but a few are inscribed with the name of the chain of stations or of the manufacturer of the coin-operated compressor system. One such token, from around 1995, is inscribed with the name of manufacturer Mass Air, of Massachusetts.


**Figure 5.166.** Air compressor token, 25 mm.

## Telescope Tokens

Allowing a closer view of the scenery for a particular period of time, telescope tokens are used to unlock view telescopes on towers, mountains, and other high points. Telescopes on the observation porch atop the Terminal Tower Building in Cleveland, Ohio, were operated with the token showing the building. Opened in

1928 and fully completed in 1930, the building was the tallest in the world outside of New York until 1953. The observation area was only open on weekends for the building's first 73 years. The observation area was closed after 9/11 but was reopened in July, 2010. On a clear day, buildings and farms 48 km away are visible.


**Figure 5.167.** Terminal Tower telescope token, 24 mm.

### Music Tokens

Music tokens could be used to operate player pianos, phonographs, and juke boxes. A pioneer in licensing and making music available in restaurants and bars was Shyvers, whose complex design included telephone lines and tabletop speakers. They could provide up to 100 choices for the listener.


**Figure 5.168.** Shyvers music token, 21 mm.

Their token was used in the 1940s in the Seattle area. Later, as many as eight thousand Shyvers multiphones were in use, and they were used into the 1950s. Very little was automated about the system. When the customer put tokens in the machine, this would open up a phone line to the central studio in Seattle, and a young woman would ask for the customer's music selections. The music would then be played over the phone line, coming from the tabletop or bar-top speaker.

### Telephone Tokens

Public telephones once used tokens almost exclusively, and this was true into the 1920s and even the 1930s in some cities. In many countries, telephone tokens were used until quite recently, though the public telephone is almost gone worldwide, as cell phones have become nearly universal in prosperous countries, and quite common even in poor countries. In the United States, the effective monopolization of telephone service by "Ma Bell" led to the uniform use of coins in public telephones, and after the monopoly was broken up, the pay phone rates were so high and the service so fragmented that tokens were not practical.

In the Chicago area, most pay phones required odd-shaped tokens called "Goetz tokens." From 1907 to 1944, Harry Goetz of the Yale Slot and Slug Company produced at least seventy-eight different patterns of tokens to use in the pay phones owned by various Chicago companies. In 1944, the state outlawed phone tokens, and coins were used from then on. The token shown has "Goetz" on it once, "Yale" twice, and the identifier "10TS" once. The cutout pattern is different from the other seventy-seven cutouts. Detailed articles can be found online that give full identifying information on many of the tokens.


**Figure 5.169.** Goetz telephone token, 22 mm.

Some phone tokens are inscribed "one switch." This was telephone company jargon for the connection of a single call. Some were sold to the public, and some were used by company employees in testing telephones. The Sunset Telephone and Telegraph Company of San Francisco used the "one switch" token with the center hole.


**Figure 5.170.** "One switch" telephone token, 20.5 mm.

Some telephone tokens were purely for internal use by the repair staff. The token from the California Water and Telephone Company of Los Angeles is such a piece; it is inscribed "test coin." These tokens were numbered, and checked out to individual staff members whose pay was docked for lost tokens.


**Figure 5.171.** Telephone "test coin," 24 mm.

### Radio Tokens

Radio tokens were used in many hospitals, both public and private, to allow patients to listen to token-operated radios. The Dahlberg radios were used around 1953 and 1954, attaching to the top of the headboard of a hospital bed. The small zinc token from Mound Park Hospital in St. Petersburg, Florida, is essentially identical, except for hospital name, to the many

other tokens from around the United States and Canada (Clark 1980:233). Patients generally bought the tokens, but some volunteer organizations provided them in small numbers to poorer patients. The Dahlberg hospital bed radios do not appear to have survived the 1950s, and it was not long until televisions rather than radios became standard equipment in hospital rooms.


**Figure 5.172.** Zinc radio token, 1953–54, 17.5 mm.

## Carousel Tokens

Carousel tokens are known from much earlier dates, but the specific example from 1995 is a good representative of this kind of token. It was not used in any mechanism connected with the carousel itself but was accepted in a slot that operated a gate, much like those in a subway station that allowed admission to the fenced area around the merry-go-round. This is the normal use of such a piece. This particular example from Riverside, California, shows a carousel horse, and many others with similar horses are known from the 1980s and 1990s when some old merry-go-rounds were reconditioned and put into use in shopping malls and amusement parks.


**Figure 5.173.** Horse token opened carousel gate, 22.5 mm.

## Mechanical Pony Tokens

Much smaller than a carousel, a mechanical pony, of a type that became common during the 1950s, is operated by putting a coin in the slot. Such ponies were usually located just outside the doors of markets (as happily screaming pony riders can disrupt commerce inside a building) and either took coins or tokens. In some cases, coins were normally used, but tokens that were given out to store customers would also activate the machine.


**Figure 5.174.** Mechanical pony token, Michigan, 20 mm.

This token is from the Meijer stores headquartered in Walker, Michigan. The mechanical ponies are not seen so often today due to a combination of concerns about legal liability for possible injuries to small customers and the development of social attitudes and conditions that no longer permit leaving small children outside a store while their parents shop inside. Variants of the mechanical pony featured more modern means of transportation, from locomotives, to cars, and to spaceships, all of which provided a similar jiggly ride.

## Batting Cage Tokens

Batting cage tokens came into use when mechanical batting cages were developed during the 1975–80 period that substantially reduced the need for labor in batting cage operations. They automatically retrieve baseballs (and later softballs) and feed them back into a token-operated machine. A major manufacturer is ABC, American Batting Cages of Salem, Oregon, whose stock tokens are used in over one thousand batting cage operations around the country. Some of these businesses order their own tokens with different designs.


**Figure 5.175.** ABC batting cage token, 28 mm.

## Golf Ball Tokens

Golf ball tokens are used in vending machines on driving ranges. The token showing a golfer hitting a long drive is from Ball O Matic of Niles, Michigan, and was used as a stock token across North America.


**Figure 5.176.** Driving range golf ball token, 29 mm.

A special token with an image unique to Industry Hills Driving Range was used at that Los Angeles County facility and was minted with a ***stock reverse die*** from the Hoffman & Hoffman mint from before 1999.


**Figure 5.177.** California driving range token, 29 mm.

### Shower Tokens

Public baths may be as old as civilization, and advertising tokens for public baths in the United States go back to the nineteenth century. But public showers operated with coins or tokens are usually found in outdoor recreation areas rather than in cities. Beaches are one venue and campgrounds are another. The "good for one shower" token from Brown's Schober Lane Campground in Bishop, California, was used during the 1990s (Kappen 1997:44).


**Figure 5.178.** Shower token, 23 mm.

### Toilet Tokens

Entry to toilet stalls through a coin-operated lock is a common feature of some Eastern cities. Some states, including California, now outlaw pay toilets. But even there, toilet use may be restricted to an establishment's customers, and some businesses use tokens to enable their customers, and only their customers, to enter restrooms. Little pieces inscribed "toiletoken" may be found around the country, sold by the Nik-O-Lok Company of Indianapolis, Indiana. The company name dates back to its foundation in 1910 when five cents was the normal price to use a pay toilet; but a quarter-dollar is the minimum today.


**Figure 5.179.** Toilet token, 24 mm.

Accompanying demographic changes of the last forty years, more and more tokens used in the United States bear Spanish wording along with English. Some of the linguistic peculiarities can be interesting, including the choice of euphemisms in the text. On the English side, this is a "restroom token." Rest, of course, is not normally what one does in a public restroom. On the Spanish side, a different euphemism appears, and the token is a "ficha de baño" or "bath token." Bathing is also not what one normally does in a public bathroom. But public decency has not been outraged.


**Figure 5.180.** Bilingual restroom token, 22.5 mm.

### Locker Tokens

Due to heightened security concerns, public lockers in train stations, bus stations, and other venues are much less common than they once were. The use of pay lockers continues in locker rooms of sports clubs, hot springs, public swimming pools, and other places where people must change their clothes. In some cases, money operates the locks. In others, tokens are used. There are also places where money is required of nonmembers, but members are given free tokens. American Locker Group of Jamestown, New York, was formed in 1958, and has a large national share of the locker business, which includes post office boxes, as well as lockers. The token was issued shortly after the company was formed, and similar tokens were used for many years afterward.


**Figure 5.181.** Stock token for locker access, 16 mm.


**Figure 5.182.** Spa locker token, 22 mm.

There are more decorative locker tokens. The example from Glen Ivy Hot Springs Spa at Corona, California, is adorned with a blossom of *Strelitzia reginae*, the bird of paradise. Clues to dating this token are the copyright symbol, rarely found on tokens before 1990, and the small "HM" mintmark, used by the Hoffman Mint starting in 1999. The locker token is less than fifteen years old.

## *Advertising and Discounting*

Advertising medals and tokens have no currency exchange value, although some early ones were pressed into use during coin shortages. The person who retains one may use it as a lucky piece, a piece of art, a memento, a toy, or as a tool depending on the form of the piece and its inscriptions and designs. But the basic purpose for their production is to advertise a particular product, service, or business. Practically anything can be and

has been advertised on a token or medal. Some subjects are more common than others, and some pieces can be more useful than others to an archaeologist if found at a site.

### Bakery Advertising Token

A bakery advertising token fits into another group of tiny medals, the Lord's Prayer pieces that are mentioned under religious medals later in this chapter. As demonstrations of their skill, token and medal manufacturers had a friendly competition during the 1870s and 1880s in manufacturing smaller and smaller versions of the Lord's Prayer in medallic form. This version has one of the smallest renditions of the prayer, though the token (at around 13 mm) is far larger than needed to hold the prayer.


**Figure 5.183.** Bakery ad token, 1889, 12.5 mm.

It was minted by M. M. Duck of Cincinnati for the Langdon Bakery in 1889. The Langdon Bakery did not use it as a bread token, it was purely advertising. It was apparently very effective advertising as it was issued in substantial numbers, including a scarcer version in aluminum, which had just then come down to a practical price for use in tokens. The bakery had its beginning when mechanical inventor Alexander "Moses" Latta left manufacturing fire engines and locomotives and set up as the first Cincinnati manufacturer of "aerated bread" in 1863. Local capitalist Solomon Langdon, who owned a wholesale flour business, bought the bakery around the time Latta died in 1865, took on junior partner G. R. Worthington to supervise the work under the name G. R. Worthington & Co., and had his son Perin Langdon trained to take over. In 1874, when Perin turned 21, the firm became Solomon Langdon and Son. The firm was incorporated in 1885, and Solomon Langdon died in 1887. His name was soon dropped; and Perin changed the name to Langdon Bakery and commenced an advertising campaign that included this Lord's Prayer token.

When a large group of big bakeries in the Midwest and East amalgamated as US Baking Company in 1890, the Langdon firm became the main Cincinnati branch of the conglomerate, with Perin Langdon as the local head man. A further effort at creating a national cake and biscuit monopoly in 1898 created the National Biscuit Company, later known as Nabisco, and Perin Langdon headed the Cincinnati branch until his death in 1908. In the 1900 census he was listed in a wealthy part of town with a wife, three children, and four servants, including a coachman. This tiny advertising token had a part to play in the consolidation of the manufacture of biscuits, crackers, and cakes, as available in your local market today.

### Whiskey Token

Whiskey is an old American product, long distilled by immigrants from Scotland and Ireland and their descendants. After the repeal of Prohibition, some whiskey producers found it necessary to advertise. James E. Pepper, a Kentucky distillery, put out an advertising piece with a patriotic theme.


**Figure 5.184.** Distillery token advertises whiskey, 22.5 mm.

### Vehicle Advertising Tokens and Medals

With long-distance travel a basic American necessity, means of getting from one place to another have been prominent in the national consciousness. Hoping to raise the profile of their own wagons, the "pioneer wagon works of the West," Peter Schuttler of Chicago issued a series of medals in 1876 with their large factory building on the reverse (Rulau 1994:432). Later medals, starting in 1878, bore a new firm name of Schuttler and Hotz. On the obverse of each medal was advertising for a particular local "agent for the Schuttler wagon." This medal, in pewter, shows a wagon on the obverse together with an inscription for "Herman Haas, Cheyenne, Wyoming Territory, dealer in agricultural implements." Wyoming would not become a state until 1890, so even if the medal were not datable through the literature, a date of "before 1890" could confidently be assigned.


**Figure 5.185.** Wyoming wagon ad medal, 1876, 32.5 mm.

A medal of unusual shape for the "GM Motorama" of 1955 shows a space-age display featuring the very latest model of automobile on the obverse, with a list of the GM brands Chevrolet, Pontiac, Oldsmobile, Buick, and Cadillac.


**Figure 5.186.** GM auto ad medal, 1955, 34 mm.

There is a series of tokens featuring bulldogs with dates starting in 1970 that are distributed by Mack Trucks to promote their "Bulldog" line of trucks. The latest date seen is 1989. The key to identifying these as having a connection with the truck company is the tiny inscription "Mack" on the collar of the dog. This 1975 token also has the date 1900, to note the 75th anniversary of Mack Trucks. As these tokens have no redemption

value and are attractive to children, they naturally become toys, and most that have entered the archaeological record have been deposited by playing children.


**Figure 5.187.** Bulldog token advertises truck line, 25 mm.

### Tokens Advertising Advertising

Tokens and medals have advertised practically everything, including advertising itself. The good luck token from 1925 asserts that classified ads in the *Los Angeles Examiner* would "reach the largest morning and Sunday circulation in California" (Kappen 1976:233). The swastika on the piece had no political significance at the time and was just considered a good luck sign like the horseshoe.


**Figure 5.188.** Token advertises advertising, 28 mm.

### Tokens Advertising Tokens

Moise and Klinkner of San Francisco were major token producers from 1897 to 1930. The origins of the firm are complicated; Klinkner founded the firm, and Moise was his foreman and agent until Klinkner died in 1893. Moise then went on his own with a new firm under his own name. Klinkner's heirs sold to Moise in 1897, and the new company was known as Moise Klinkner until it went out of business in 1930 (Kappen 1976:xvi). Marks and addresses of every branch and incarnation of these token manufacturers can be found on tokens, and they were used in many places outside of California, though the densest population of them is in the San Francisco Bay area.


**Figure 5.189.** Klinkner token advertises tokens, 20.5 mm.

This particular advertising token bears the company's Oakland address and phone number across the bay from San Francisco. As well as an advertising token, it was a stock token used by many stores in telephones, slot machines, and other token-operated devices. The specific products it advertises are telephone tokens, red rubber stamps, seals, and "checks," meaning what we today would call merchants' tokens. These tokens can be dated reasonably closely, despite generally not bearing a date, by the business addresses, firm names, and styles; though it should be kept in mind that a die once made was rarely discarded. A token from 1929 could well use a ***reverse die*** engraved in 1894 that was salvaged from the wreckage of the old factory after the 1906 earthquake. Many other token makers also issued stock tokens or advertising pieces with their names and addresses.

### Token-like Tools

Some tools look a bit like tokens or medals and can be given to a numismatist to describe when uncovered at an archaeological site. One example is a round device used to check the gap on spark plugs. Many of these were produced as premiums to be given to customers, or as items to keep at the cash register and sell for small sums, with prominent advertising as part of the design. Others, sold for higher prices, are marked with manufacturers' names. The example shown here bears the Blue-Point name, a subsidiary brand of the Snap-On line, and was made in the United States, probably in the early 1960s. With old tool catalogs, it is possible to assign a fairly narrow date range to many examples.

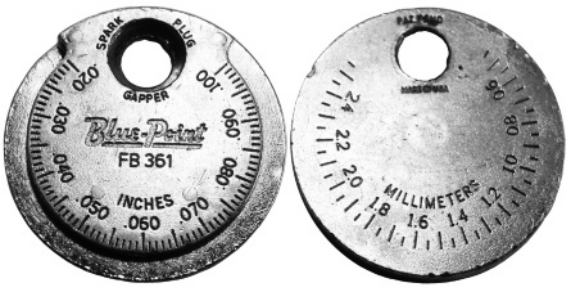


**Figure 5.190.** Blue Point spark plug gapper, 38 mm.

Round devices with screwdriver blades were often given out as premiums, usually in the form of a keychain with the screwdriver serving as the keychain tag. The round stainless steel four-blade screwdriver is stamped with the name and logo of Hemet Federal Savings, now lost in a series of mergers and takeovers. The reverse has a patent number, and the date "74," that would fit into the chronology of the California bank.


**Figure 5.191.** Advertising screwdriver for bank, 31 mm.

Another example is the record adapter from the Webster-Chicago Corporation. When inserted into the center of a 45-rpm record with a large hole, it permitted the listener to play the

record on a phonograph with the smaller spindle required for 33-rpm records. The speed had to be adjusted, or the records sounded very strange. This particular adapter tended to damage records and was supplanted by plastic rivals soon after it was first sold in 1950.


**Figure 5.192.** Record adapter from 1950, 38 mm.

Some hardware can be mistaken for tokens. For example, washers that have names or numbers impressed into them can resemble tokens. The example with "Hilti" on it is from the Hilti line of fasteners, which are made from special strong steels. Sometimes symbols mean just what they appear to mean. This washer is round ("R") and is 23 mm in diameter.


**Figure 5.193.** Hilti washer with inscriptions, 23 mm.

The "slugs" that electricians knock out of electrical boxes when installing them are either blank or have names or numbers on them. In either case, they have been used fraudulently in vending machines and slot machines, much to the annoyance of the operators. But some of them look very much like tokens, and have puzzled collectors and scholars who have tried to identify them. The inscription "Steel City" on the galvanized steel piece just the size of a standard video game token makes it look like a token. But it was knocked out of an electrical box, and a careful look at electrical boxes offered online by Thomas & Betts, an electrical supplier headquartered in Memphis, Tennessee, shows identical knock-out slugs in their box walls with the "Steel City" inscription. The website tells us that the Steel City brand has been used since 1904. The rough spot in the edge of the "token" next to the letter "y" of "city" is where it was broken off from the steel box.


**Figure 5.194.** Steel City "token," 23 mm.

That is enough information for a collector to set the piece aside as a mistake, a nontoken. But this is not good enough for an archaeologist. In fact, "slugs," washers, and even sheet metal cutouts have been pressed into use for purposes for which tokens and coins have normally been used. Just because an item turns out to have been produced as hardware, a token use cannot be excluded. If this type of slug is found with several tokens, but not with any electrical equipment or tools, it was probably used (or attempted to be used) as a token. If it is found with hardware items, particularly electrical hardware, that is another matter. Alternatively, if it is found with a set of checkers, and is needed to make up the full set, it is reasonable to postulate another use entirely. This is a reminder that whatever an artifact's original purpose, context is vitally important in discerning its use at the time it was deposited.

## Calendar Medals

Calendar medals are very old, having been produced in Europe centuries ago. American versions include this 1853 medal copyrighted and struck by I. B. Person. It carries an advertisement for J. B. Hyde, publisher, of 162 Fulton Street, New York City (similar medals are known for other businesses). Half the year is on one side, half on the other.

**Figure 5.195.** New York calendar medal, 1853, 37 mm.

It is understandable that people tended to put these medals away at the end of the year, and they would have the usual tendency to get lost, become playthings, or slip through cracks after their period of usefulness expired. It is more commonly found than some think, as can be seen on Internet auction sites where several different examples are offered as of this writing. Each is described as extremely rare. This calls into question the reported rarity of the piece. Advertising medals and tokens are almost all produced in substantial numbers for their area and time period, and some are likely to turn up, even if presently believed to be scarce.

A variant of the calendar medal is the advertising medal that shows a schedule for a sports team. The medal lists each day the team is expected to play and at what venue. Whiskey advertising for Johnny Walker Red is on the obverse of the medal with the 1970 schedule of the Oakland Raiders football team on the reverse. Fourteen games are listed. Home games simply have the name of the opposing team, while away games say, for example, "at Denver."


**Figure 5.196.** Whiskey advertising token, 38 mm.

### Advertising Flippers and Spinners

Tools for games of chance have been popular for millennia, and some very simple ones have been distributed as advertisements. A heads-and-tails token for flipping was put out to promote Bull Durham tobacco, a loose tobacco sold in sacks to use in rolling one's own cigarettes. The long Bull Durham advertising campaign, reaching everyone in the country over and over, was quite intensive. Just putting "heads" and "tails" on the tokens would not get the message across. The obverse says "heads you win if you smoke 'Bull Durham.'" On the reverse, "Tails you lose if you don't smoke 'Bull Durham.'"


**Figure 5.197.** Bull Durham tobacco flipper token, 31.5 mm.

A spinner, which is placed on the table, counter, or bar and spun to see to whom it points when it comes to rest, was issued to advertise the Horn-draulic loaders sold to farmers by the Horn Manufacturing Company of Fort Dodge, Iowa. Manufacture of the loaders began in 1947, and the spinner is from about 1950. The spinner spins on the raised dot on the obverse, and the arrow on the reverse says "you pay" as it points to the "winner." Many companies have issued such spinners, and salesmen have commonly distributed them in bars, where the arrow determines who pays for a round of drinks. Many spinners have the same inscription on the reverse, "Round and round she goes, where she stops nobody knows."


**Figure 5.198.** Loaders advertised on spinners, 32 mm.

### Wishing Well Pieces

Wishing well pieces are not very common, and a wishing well good luck piece advertising a cemetery is really quite unusual. During the period from 1927 to 1947, there were three reroutings of State Route 25 through Newark, New Jersey, and it will take more research to pin down just which cemetery had a wishing well into which visitors were urged to drop the token. Four cemeteries in the immediate area had names including "Rosemount" or "Rosemont."


**Figure 5.199.** Wishing well piece advertises cemetery, 25 mm.

### Golf Ball Markers

Golf ball markers are placed on the green where a ball came to rest. They allow the ball to be cleaned or replaced without losing its place. Of course, a coin once served that purpose and often still does. However, during the 1930s golf ball markers were produced as advertising, and many golf courses produced their own, a custom that is now common. Some manufacturers have made markers for a great many courses, and markers with multicolor enamel, ornate designs, or spikes to secure them into the turf may be found at pro shops. A marker commemorating the US Open of 1938 was distributed for advertising purposes by Dunlop Golf, a manufacturer of golfing equipment. Cherry Hills, in a suburb south of Denver, hosted the Open, and it brought "good luck" to the club, which did well financially. The winner was defending champion Ralph Guldahl of Texas, who took home a prize of one thousand dollars, equal to a skilled worker's wage for a year.


**Figure 5.200.** Golf ball marker for US Open, 1938, 18 mm.


**Figure 5.201.** Golf ball marker, made in China, 19.5 mm.

The golf ball marker from the PGA Tour Partners Club was a premium given to subscribers to their magazine. Its relatively late date is shown by the neatly stamped word "China" on the reverse. As token manufacturers in the United States became rare in the early 2000s, Chinese manufacturers took up the slack.

### Premiums

Premiums are items given away with a purchase. Many of the tokens and medals listed in these pages were given away as premiums but had other specific uses. Some medals are just premiums, and their alternate use is as toys for children or adults. One specifically intended for younger people is the piece of "Walker's Lone Indian Wampum" given away at Walkers in downtown Los Angeles in conjunction with an advertising campaign in 1937.

**Figure 5.202.** Walker's Lone Indian Wampum, 1937, 15 mm.

Walkers was a sponsor of The Lone Indian radio show that started in 1934 and ran at least through the end of 1937. During 1937, most of the shows reminded the listener that every time they shopped at "Walker's, the friendly store", they would get "free wampum with every purchase." And this little piece of copper was the wampum. A few have been unearthed in Los Angeles recently by treasure hunters, and the stories told about the piece on the Internet are often wildly inaccurate. Wampum, in real life, was made of shell beads (see Chapter 2). Early imitations were ceramic and did not have any writing on them, but perhaps the term "wampum" was here used in the slang sense of "money."

Another premium, of a general type used in many countries, was the aluminum token issued in series. One token was given with each purchase of gasoline. In this case, the gasoline was of the Shell brand, and the series showed an outline map of each state. The example shown is Rhode Island.


**Figure 5.203.** State gasoline tokens, 26 mm.

## *Lucky Pieces*

Lucky pieces have been used as advertisements for well over a century. The zodiac piece, in this case Scorpio, advertised the Usher's magic and astrological supply store in Venice, California. Among their merchandise was a series of twelve lucky pieces they had struck in 1936, one for each constellation of the zodiac. The very detailed design includes all the signs of the zodiac, a circle of good wishes, and a central globe with a Saturn-like ring on one side. On the other, the scorpion of Scorpio is set against desert scenery with the astrological sign in a six-pointed star, and a lucky day and lucky numbers are cited.


**Figure 5.204.** Lucky piece, 1936, 25 mm.

### Four-leaf Clovers

Four-leaf clovers are good luck symbols and are found on many advertising pieces, sometimes in the background and sometimes front and center. A big four-leaf clover is in the center of the obverse of the corroded aluminum piece from the Beall Improvements Company. This specific "lucky pocket piece" was found by archaeologists in the remains of an old brothel in Sandpoint, Idaho, and dates to the early years of the twentieth century. "I'll be your mascot," says the token. "Don't lose me." This token appears to be later in date than an encased 1901 cent from the same company known from the literature, but this one does not appear to have been listed anywhere, so it is hard to fill in the illegible word.

**Figure 5.205.** Decatur grain lucky piece, 34 mm.

These tokens were distributed to millers around the country by the Beall Improvements Company of Decatur, Illinois, in order to spread the word about their "wheat steamers, wheat scourers, [illegible] cleaners, degerminators, corn cleaners." The brothel building burned down, and afterward local people used the site to dump piles of firewood ashes, creating a classic alkaline soil. The corrosion of this aluminum token is a normal consequence of spending decades in strongly alkaline soil. As for who brought it to the brothel in the first place—there was a local distributor for Beall in Spokane, who may have had traveling salesmen. And in the wheat-raising "inland empire" there were dozens of flour mills, any one of whose workers might have carried this pocket piece until it fell out of his pants, or was given to a young woman.

### Good Luck Tokens

Good luck tokens featuring horseshoes are still made today. A horseshoe with a swastika at each point is another matter, and this token would not have been made after the early 1930s, when the swastika ceased to be an innocent good luck symbol. The "Copper Crank Club" was a marketing gimmick for the Copper-Clad Malleable Range Company of St. Louis, Missouri. This token was made in the early 1920s, and the obverse shows a copper-armored jester figure, standing on another swastika. The inscription on the reverse is "Be a user of the copper-clad, or a life member of the 'wish I had.'" A four-leaf clover is centered between the swastikas. A company patent application approved in June 1913 shows a diagram of a crank used to change the draft in the wood-burning Copper-Clad stove. As seen in other company advertising, the jester figure was the "Copper Crank," a punning reference to the crank that was a feature of the stove.


**Figure 5.206.** Copper Crank lucky token, 1920s, 32 mm.

### Letter-punched Tokens and Medals

Letter-punched tokens and medals are produced at tourist attractions and amusement parks in machines that allow the customer to select a certain number of letters and numerals to be punched into the metal. Between twenty-five and thirty-five are the usual numbers of letters and spaces. Many bear the name of the amusement park or other machine venue, though some do not. They have been produced since the beginning of the twentieth century and were very popular during the 1930–90 time period. These are common and of little value, which means that lost ones often enter the archeological record without much effort by anyone to recover them. Each is unique, and often carries helpful information for an historical archaeologist. The most common inscriptions include names and addresses. Dates and the names of companions are also not unusual.

One example of an informative letter-punched token is the aluminum piece with a six-pointed cutout star. It says "J. B. Lumpkin. Williamstown. W. V."


**Figure 5.207.** Letter-punched token, 32 mm.

The US Census, the Social Security Death Index, and online indexes to grave markers produce the material for a capsule biography of the only J. B. Lumpkin of West Virginia who was a child during the period of use of this specific design of souvenir, from roughly 1930 to 1950. Born on March 8, 1929, in the tiny hamlet of Murphy, in Ritchie County, West Virginia, he was named John Benjamin Lumpkin Jr., after his father. His mother, Lillie Virginia Lumpkin nee Riggs, died the day he was born. He had several older sisters who no doubt helped raise him. He joined the US Army Air Force when he turned seventeen in 1946 and retired from the Air Force as a master sergeant in 1967. He married nineteen-year old Nina Ruth Deen, born in another tiny hamlet in Ritchie County in 1956 when he was twenty-seven. After his retirement they lived in Pataskala, Ohio, just east of the Licking County line from Columbus, and he died at a hospital in Columbus in 2002. He was buried in his wife's family's Deem Cemetery in Ritchie County, and she joined him there when she died in 2007. At some point, he and some of his family probably lived in the Ohio River town of Williamstown in the next county to the west from Ritchie County. And at some point in his youth, he must have visited an amusement park and paid a nickel or a dime to inscribe this souvenir of his visit. One small lucky piece can be the key to discovering a whole life, and untold thousands of them have been deposited in the soil by playing children.

Another example of this type of token is from the Guinness Museum at Fisherman's Wharf in San Francisco where a young woman named Liz recorded in solid metal her love for Mark on April 20, 1991. Identifying either Liz or Mark would be highly unlikely, but the date and location marked on such a token could be helpful in reconstructing the past. As many such tokens are lost when children play with them, they enter the archaeological record every day.


**Figure 5.208.** Guinness Museum token, 33 mm.

### *Encased Coins as Advertisements*

Encased cents were usually made either for advertising, with the name of a particular business stamped into the aluminum along with good-luck symbols, or they were produced for sale as good-luck tokens. Those intended as advertisements are noted here. Advertising pieces usually used shiny uncirculated cents of


**Figure 5.209.** Encased 1936 "Penny from Heaven," 31.5 mm.

the current year or the previous year if struck early in the year. The Stork Club of New York, some of whose young female staff members were described as "heavenly" in contemporary advertisements, hints at a heavenly connection on its encased cent from 1936. "Stork Club–Lucky Penny" is on the obverse, while the reverse says "Stork Club–Pennies from Heaven."

The 1948 encased cent from the Pollard-Carrell Company of San Fernando, California, uses a stock reverse that says "Keep me and never go broke." Though issued in California, it must have been struck in the East, as it uses a 1948 cent from the Philadelphia mint. While the piece does not say so, it was issued by a Chevrolet automobile dealer in conjunction with the opening of a new Chevrolet factory in nearby Van Nuys on February 18.


**Figure 5.210.** 1948 encased cent, 35 mm.

Some real experts on luck have produced many "good luck" encased cents. They were popular advertising pieces for casinos since just after World War II. Joe Binion, a bootlegger, gambler, and mob associate from Texas bought two clubs in Las Vegas in 1951 and made them into The Horseshoe Club, a casino with the first carpeted floor of any in town. Sawdust had been the previous standard floor covering. Soon, several of his past deeds caught up with him, and Binion was a guest of the federal government at Leavenworth from 1953 through 1957. When he had to depart Nevada, he "sold" the casino to his close associate Joe W. Brown, who privately promised to sell it back when Binion returned. Meanwhile, Brown enjoyed his stint as a casino owner and put his name on the sign and on the advertisements, including encased cents.


**Figure 5.211.** Encased cent with Joe Brown, 34 mm wide.

The horseshoe-shaped encased cent from 1955, probably produced in the West with a Denver-mint cent, was used as a keychain tag. The reverse says "Keep me and never go broke," but there was also enough room for a four-leaf clover, and the words "I bring good luck." The obverse says "Joe W. Brown's Horseshoe Club, Downtown Las Vegas Nevada." After Binion returned to Las Vegas and worked out remaining legal difficulties, he repurchased the club and changed the sign (and the advertising pieces) to omit Joe Brown's name.

Las Vegas encased coins can be found anywhere in the country. Pieces advertising high-end restaurants and nightclubs have been carried to other cities by tourists but are more often found around the place they were issued. Local pieces like the San Fernando car dealer's encased cent would normally be found only in the region where they were issued.

## *Store Discounting Tokens*

Discount tokens good at a particular store were sometimes good only on particular merchandise and sometimes good on anything in the store (usually with certain legal exceptions). A twenty-five-cent discount could be taken on any purchase of one dollar or more with the token good at Fernando Valley Milling and Supply Company. A little country feed store when it was founded in 1916, by 1933 it had become a "big plant" that dominated the manufacture and distribution of poultry feed in the whole area, back when the San Fernando Valley was country. The valley is now a heavily urbanized part of metropolitan Los Angeles. The token was probably issued sometime in the 1920s to help bring in customers and aid the growth of the company.


**Figure 5.212.** Fernando Milling and Supply Company, 24 mm.

A store discounting token good only on particular merchandise was the five-cent discount token from The Flag Studio of Pasadena, a camera and photo shop that offered the discount only on Kodak films. Photography shops are often very well documented, and The Flag Studio certainly is. It was operated from 1909 into the 1940s by Emil P. Groetzinger and his sons, and some two thousand glass and film negatives of their work, including photos of the Rose Parade, are now in the Pasadena Museum of History. The token, judging by its style, is probably from the 1930s. The shop was directly on the route of the Rose Parade, and the token may have been handed out at the parade on New Year's Day.


**Figure 5.213.** Rose Parade discount photo token, 25 mm.

### Gasoline Station Premium Tokens

Gasoline station premium tokens were used for decades in Buffalo, New York. Similar premiums in other localities were usually paper or cardboard, as for example the trading stamps used nationally from the 1920s through 1970s. In Buffalo after World War II, most service stations gave out metal tokens as a discounting and customer retention device. This aluminum token from the 1950s is from Nelson's Service Station and is identified only by its location at the intersection of William and Mark Streets.


**Figure 5.214.** Buffalo gas station premium token, 25 mm.

### Manufacturer Discounting Tokens

Manufacturer discounting tokens were issued broadly, and they entitled the bearer to a discount on a product at any store. They were the predecessors of the coupons later printed in newspapers and distributed in mass mailings, and some were issued well after the mass distribution of paper coupons began. Some are still being issued today. A token for Ben Hur laundry soap, good for one free cake with the purchase of another cake, was issued by Palmolive-Peet of Chicago and used nationwide. It can be dated to around 1926–28 by the name of the company, as Palmolive-Peet was formed by a merger in 1926, and a further merger with Colgate in 1928 changed the name again. This general size was common for soap tokens from several companies.


**Figure 5.215.** Soap company discount token, 32 mm.

A regional flour distributor, Capitola Flour, offered five cents off a sack of flour. The merchant was to return the token to Atlanta Milling in Georgia to be reimbursed. These tokens, from around 1935, can be found around the South but not in states far from Georgia.


**Figure 5.216.** Depression-era flour discount token, 28.5 mm.

Manufacturers' discount tokens could bear very high face values, if good for a discount on a correspondingly high-priced item. The W. F. Schwentker Piano Company of Evansville, Indiana, used their large "advertising novelty" token to offer a ten-dollar discount on any piano, player piano, or phonograph. The Schwentker firm flourished during the 1920s, until 1927; so this token is probably from the early-to-mid-1920s.


**Figure 5.217.** Piano company discount token, 39 mm.

### *Commercial Drawing Tokens*

Tokens that might, just might, be good for prizes if turned in at a store or other establishment have been issued in considerable numbers since the late 1940s. Most are metal, but some are plastic like this Pillsbury's Best Flour token from 1949. It offered a possible prize of fifty thousand dollars. Later examples from succeeding years went up to ten times that much, and other companies were soon offering prizes of more than a million dollars. Most were to be turned in for a ticket with a number, but some had the numbers impressed into the token. These were all widely distributed and can generally be dated to a particular year, even if the date does not appear on the token.


**Figure 5.218.** Pillsbury drawing token, 28.5 mm.

### *Bank Bonus Coins*

During the first few decades of the twentieth century, tokens were used to offer premiums on savings and checking accounts at banks. In Pennsylvania, a 1924 token was "good for 25 cents in opening a Christmas Club or savings account" at the Metropolitan Trust Company of Philadelphia.


**Figure 5.219.** 25-cent reward token, 31 mm.


**Figure 5.220.** Minneapolis bank token offers 50 cents, 25 mm.

In Minnesota, a token probably issued a little later in the 1920s promises fifty cents, and notes that interest is paid on both savings and checking accounts at the Wells-Dickey Trust in Minneapolis. An earlier version only mentions interest being paid on savings accounts. There is a condition, though. Opening the account required a deposit of at least one dollar. These tokens were widely distributed, but only in the areas in which a particular bank did business.

## *Real Estate Discounting Tokens*

Around the start of the twentieth century, tokens offering a discount on land, in some cases in conjunction with a free train ride to the locality, were put out by land companies (including some railroads that were selling off land). Real estate developers who established new suburban cities produced real estate discount tokens, especially during the 1920s. Many such tokens boast that the new subdivisions are "white only" (Coffee 1991:3). After a long lapse, a few more such real estate discount tokens were issued in the 1960s, as another wave of suburban and even rural subdivisions swept the country. Once again, some of the real estate agents offered a transportation subsidy.

The B. K. Haynes Corporation was formed at Front Royal in 1966 to sell land in the Shenandoah Valley of northern Virginia. It soon began distributing the "land treasures coin" that was good for five dollars off a land purchase, and good as well for fifty cents in gasoline, paying for the drive to the land. The gasoline subsidy helps date the token, as a few years later, fifty cents in gasoline would not get anyone very far. *Land Company and Real Estate Tokens* by John M. Coffee, Jr., published by the American Vecturist Association in 1991, is the standard reference to the entire series.


**Figure 5.221.** Shenandoah Valley real estate token, 25 mm.

## *Musical Performance Discount Token*

With unprecedented sales of folk records and massive attendance at concerts, folk music was hot around 1963. Its popularity was more limited, but still considerable, later in the 1960s. Sometime during this period, the token with a musical note grasped by ice tongs (the ultimate in "cool") was good for a half-dollar off on Tuesday night admission to the Ice House, a folk music venue in Pasadena, California.


**Figure 5.222.** Half-dollar off at the Ice House, 28.5 mm.

## *Military Trade Tokens*

### Military Canteen and Mess Tokens

The sutler system of Civil War times and earlier, involving private peddlers selling to soldiers at temporary and remote stations, was the subject of innumerable complaints and gave way in 1867 to traders authorized by the military at each post. Continued abuses and inadequacies led the Army to establish canteens in 1889, putting the traders out of business. As a further development in Army control over sales to soldiers, in 1895 the Exchange system was approved. Post commanders determined how to use the profits from the exchanges, usually devoting it to the welfare of soldiers and their families. It was these exchanges that served as the model for the exchanges at Civilian Conservation Corps camps. In 1941 local supervision was ended, and the Army Exchange Service was established. When the Air Force separated from the Army in 1948, the name was changed to Army and Air Force Exchange Service. The familiar term "PX" is simply an abbreviation for "post exchange," a local branch of this service.

The Fort Huachuca canteen token from Arizona was originally issued around 1890 with an imprinted value of six and one-fourth cents, half a bit. Sometime in the next few years, possibly after 1895 when the exchange system was instituted, the value was changed by counterstamp to "25," presumably twenty-five cents. Only a few of this token are now known, probably indicating that the remainder rest under the soil of Cochise County, Arizona.


**Figure 5.223.** Countermarked exchange token, 28 mm.

Ships' stores were officially established in 1909, based to some degree on the Army model. In 1949, a Navy version of the Exchange service was adopted, and it continues today. The USS *Idaho* (fourth ship of that name) was launched in June, 1917, and embarked on her first voyage in 1919. The ship participated

in several major Pacific battles of World War II and then was scrapped out in November, 1947. The simple tokens used in the ship's store included this ten-cent token, probably put into use with the ship in 1919. Ships store tokens, particularly those of lower value, would be found either in port cities visited by the ship or at the homes of former sailors who brought one or two home.


**Figure 5.224.** Ships' stores token, USS *Idaho*, 19 mm.

"Closed mess" is basically an obsolete term. It was a dining arrangement for officers in which each officer put in a specified amount for food, and the food was only served to those officers. An "open mess" was more flexible, and usually involved payment per meal (or drink) and the ability to bring guests. In most cases, an "officers open mess" became an officers' club; a "noncommissioned officers' open mess" became an NCO club; and an "enlisted men's open mess" became an EM club, now an "E club." Many such messes or clubs were (and still are) on or next to bases abroad, but they are outside the scope of this survey, being outside of North America.

There have been hundreds of such messes or clubs within the borders of the United States, on or next to military bases. The tokens are good for meals, drinks, and all the minor items that may be on sale in a bar or cafeteria, such as combs, soap, razors, matches, souvenirs, and the like. The range of material sold in an open mess or club tends to be broader in remote areas and narrower when there are stores in the immediate neighborhood. Two examples from two noncommissioned officers open messes show some of the wide range in types to be expected, and the dangers inherent in making assumptions about military initials.

The earlier one is of aluminum with a blank reverse; it simply says "NCO 50 CAFB." We know it is from after 1947 because Air Force Base was a term adopted when the Air Force was separated from the Army. Experienced students of tokens will recognize the "NCO" as meaning "noncommissioned officers," with the "open mess" understood. Some token manufacturers literally did charge by the letter when they made dies, and "50" must mean fifty cents. But where was CAFB? Clark, in the Philippines? Castle, in California? Carswell, in Texas? If we go to the index of Cunningham's 1995 *Military Tokens of the United States*, and compare several "CAFB" listings to the pages to which the index refers, we can identify this token as having been used at Charleston Air Force Base in South Carolina, probably when the base was reopened in 1953. These were replaced later in the 1950s with a set of four denominations with gold plating (or gold colored). During the late 1960s new tokens were used that said "Charleston, S. C." on them.


**Figure 5.225.** NCO token from South Carolina, 28 mm.

The white plastic token with black letters tells us exactly where it is from: Columbus, Mississippi. It is another NCO open mess token, good for"5 ¢," and "C.A.F.B." stands for Columbus Air Force Base.


**Figure 5.226.** NCO token from Mississippi, 23 mm.

From the style, it is probably from the early 1960s, and this is not contradicted by the information in the Cunningham reference. If the two CAFB tokens were found together, there would be a strong tendency to assume that the aluminum token was also from Mississippi. As Air Force personnel can be in one state in the morning and another in the afternoon, it is not unusual for tokens from different air bases to be found together.

### Military Barber Shop Tokens

A regimental barber shop in Texas used the aluminum fifty-cent token (Cunningham 1995:261). The 8th Cavalry Regiment was based at Fort Bliss from 1917 to 1942.


**Figure 5.227.** Cavalry barbershop token, 31 mm.

### Military Amusement Machine Tokens

Military amusement machine tokens have mainly been issued abroad where US coins were either not available or were banned in order to reduce black market use of US currency. But some amusement tokens have been used within the United States at military facilities. The token with "Department of Defense" on the reverse was used at the Great Lakes Naval Training Center in video machines under the control of Navy Recreational Services in the 1980s.


**Figure 5.228.** Naval Training Center game token, 22.5 mm.

## Weights

Postal scales used weights denominated in ounces, and some of these scales were also used in stores to weigh small purchases well under a pound. Like coins, small weights may find their way into the archaeological record by accident or when a store or office is destroyed by fire, flood, or tornado. Avery is the brand name of a British scale company that also operated in the United States, though it has been incorporated into a series of large multinational conglomerates during the last half-century. The half-ounce weight was made between World War I and World War II, probably in England, and was used in the United States.


**Figure 5.229.** Half-ounce weight, 23.4 mm.

Apothecary weights are little coin-like discs with English and Greek words and symbols on them. They were used by druggists to weigh medicines and by some other merchants to weigh jewelry, or other very small merchandise. Since the electronic scale became common, and particularly since metric measurements became the pharmaceutical standard, they are generally no longer used. One scruple is one-third of a drachm. It takes twenty-four of them to equal a troy ounce (31.1 grams).


**Figure 5.230.** Weight for three half-scruples, 15 mm.

A weight marked three half-scruples, or "half drachm," was produced by John Maris of Philadelphia and New York. The first "S" after the "3" stands for "semi" and the second one for "scruple." So the inscription means "3 semi-scruples." The "M" in a diamond stood for John M. Maris Co., the firm name. John M. Maris ran the firm from 1843 until his death in 1885, and his son ran the firm from 1885 to 1905. Under the same name, the firm still produces and imports pharmaceutical tools and instruments today. This token is probably from around the turn of the twentieth century.

Other weights that may be recovered archaeologically include coin weights, brass weights that often look like coins but are used to weigh gold coins to check for excessive wear or for counterfeits with insufficient gold content. Other weights are less likely to be given to a numismatist for analysis, as they generally do not resemble coins.

## Tags

### *Luggage Tags*

Some private mints produced luggage tags, beginning around the turn of the twentieth century, for use on suitcases or trunks. The shop that sold the tag would normally use a letter stamp set to add the name and address of the owner. The luggage tag with the American eagle and shield was used by Daniel Moscovitz of Hartford, Connecticut. He can be located in the 1930 census where we learn that he was born in Romania around 1866, spoke Yiddish, as well as English, and immigrated to the United States in 1887. If this tag were found in an archaeological site in Hartford, it might be helpful to compare his address in 1930 with the find spot. Generally speaking, anything found at an archaeological site that bears a name should send the analyst to the census and such other references as city directories.


**Figure 5.231.** Moscovitz luggage tag, 18.5 mm long.

### *Key Tags*

Key tags are used to identify keys and sometimes to allow their return by mail. The simplest key tag is simply a flat piece of metal with a hole and stamped with a name or number. In some cases, an obsolete or low-value coin might be used as the blank. The Bank of Upper Canada halfpenny token from 1854 was given a large hole and crudely stamped "IN," for use as a key tag. Another tag somewhere may say "OUT," but it has not come to the attention of the authors.


**Figure 5.232.** Key tag from 1854 Canadian token, 27 mm.

Tags have been manufactured to label keys, usually with a blank space to add identifying numbers or letters. Some of these tags have the manufacturer's name or logo. Auction records show that antique padlocks labeled "Monal" have recently been sold, and they are believed to date to the early twentieth century. This key tag with the "Monal" name has been stamped "G" on one side, and "Z" on the other. The "Z" is doubled, a common phenomenon.


**Figure 5.233.** Century-old key tag, 21.5 mm.

Hotel keys, before the transition to electronic key cards, often were attached to tags bearing a message intended for postal workers that would guarantee the postage if the key and tag were dropped in the mail. A hotel guest who absent mindedly retained the key to a room at John Ascagua's Nugget in Sparks, Nevada, despite the heavy weight of the big 68-gram brass tag, could throw the key and tag in the mail after returning to Kalamazoo. The key and tag would be sent back to Sparks where the hotel would pay the postage due. The key tag was produced in 1960, when John Ascagua bought the Nugget. Some people kept the keys and tags as souvenirs, and a scattering of them may be found around the country.


**Figure 5.234.** Sparks, Nevada, hotel-casino key tag, 43 mm.

Postage-guaranteed key return tags have been provided by charitable organizations to donors, by organizations to members, and by banks to customers. A "registered key fob" is what the American Lung Association called one, on their example from an Oakland, California, address. "Drop in any mailbox, breathe easy" it says on the side with the registered number. The obverse has the Cross of Lorraine, a symbol of the fight against tuberculosis, originally the disease against which the organization concentrated its efforts. More recently, smoking and air pollution have been the major targets. The word "member" is at the bottom of the obverse, indicating that someone who sent in dues to join the association would have the "key fob" number registered, and if a key ring was mailed in, it could be returned to the owner's address.


**Figure 5.235.** Lung Association key tag, 31 mm.

## *Garment Tags*

Tags with the manufacturer's name or a brand name were often used on suits, other garments, and such associated items as belts, shoes, and hats. Most were intended to be removed when the garments were prepared for use, and their normal fate is to be used as playthings by children. Albert Richard advertised that he sold "the coat of the stars." A review of magazine advertisements from the 1935–37 period shows that he was not in Hollywood outfitting movie stars but rather in Wisconsin, outfitting football stars. The company headquarters were in Milwaukee, and that was the address to send a request to get booklets about football heroes who wore Albert Richard coats. These tags, like the shoe tags below, were the predecessors of today's logo tags attached to high-end fashion items and described by the manufacturers as "jewelry" for shoes, purses, and other fashion items.


**Figure 5.236.** Coat tag, 25.5. mm.

## *Shoe Tags*

Shoe tags were intended to make it obvious that the shoes being purchased were classy merchandise, and the nice shiny tag was intended to suggest high price by looking like a piece of gold. The tag for a pair of willow calf shoes went a step farther and used some Arabic writing distorted from a coin of the Ottoman Empire to make the tag look a little like a coin. The words are too blundered to read. On the other side, a willow tree is shown, with "White Brothers & Company, Boston U.S.A." and the words "willow calf." Willow calf was a kind of light-colored leather.


**Figure 5.237.** Shoe tag, 24 mm.

White Brothers made shoes from this leather, and the tag was produced starting in the 1890s in Boston. The blundered Arabic is just for decoration, and the horseshoe is intended to make people keep the token for good luck (and remember to get the same shoes next time). The tag is very common over a century later, and it turns up all around the country. When they are found, people put them on Internet auction sites as "old California tokens" and try to get a hundred times what they are worth. But the "calf" has nothing to do with California, as the "Boston" should make clear.

## *Doll Tags*

Doll tags were attached to new dolls of the fancier sort earlier than 1920, but it was in the twenties that some mass-produced dolls started coming with "golden" (gold-plated) tags as an additional selling point. The Madame Hendren doll was just one of the brands that came with a token intended for play or as a good luck token for a child. This example appears to have been subjected to much rough play. "Madame Hendren walking and talking doll" is on the obverse, and on the reverse it says "Keep this coin and good luck will follow you–Good luck." The swastika firmly dates it to the period before 1932, and in the arms of the swastika are a four-leaf clover, a horseshoe, a turkey wishbone, and what are usually described as "runic symbols." There are many varieties. A little research on doll collector websites (and there are many!) allows the token, and the doll, to be dated to the "mama doll" craze of 1922–23.


**Figure 5.238.** Doll tag, ca. 1922, 32.5 mm.

## *Pig Tags*

Pig tags, which are similar to tags used on other livestock, have two purposes. One is to provide accurate information on pigs while they are on the farm. In addition to the number that comes with the tag, sometimes information is scratched or stamped into metal tags or written in indelible ink on other tags. Some farms order special tags with the farm name, like the Bennett Brothers of Warsaw, Missouri. The second use of the tags is to stay with the carcass of the pig on its way through the slaughterhouse, so that each piece of meat can be identified as from a particular animal, and any anomalies or problems can be traced to the particular pig and farm. There are also tags used on humans by mortuaries for use in crematories, so that one individual cannot be confused with another.


**Figure 5.239.** Bennett Brothers pig tag of Missouri, 35 mm.

## *Dog License Tags*

Dog license tags go back to no later than the 1400s in Holland, and the 1500s in parts of Germany. Some localities used inscribed collars that were already used on dogs for identification, but others issued metal license tags to go on private collars. Thomas Jefferson (who lost some livestock to dogs without being able to identify their owners) wrote the first dog license law in Virginia, but he did not invent the concept. Most dog license tags used to be fairly simple, like the example from 1967 from Redcliff, Alberta. Redcliff apparently expected to provide tags for fewer than a thousand dogs, as its tags only had three digits. In the United States, most localities "license" dogs and prefer not to mention the obligatory fees. But Redcliff frankly stated on the tag that it represented the payment of the "dog tax."


**Figure 5.240.** Dog license tag, 1967, 23.5 mm wide.

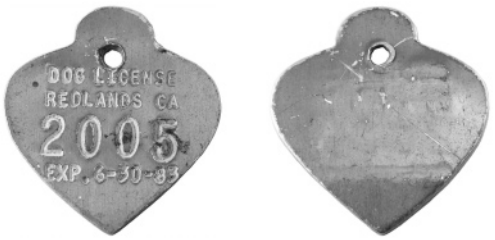


**Figure 5.241.** California dog license, 1982, 28.5 mm wide.

A dog license tag from Redlands, California, that was issued in 1982 (and as is usual is inscribed with the date of license expiration in 1983) is a typical example from the last half-century. It is made of anodized aluminum—in this case with a green surface stamped with a serial number 2005 (not to be confused with a date). This example was worn by a dog for some months, and it shows scratches and uneven wear on the hole.

## *Dog Vaccination Tags*

Separate rabies vaccination tags are used in some jurisdictions. Some are supplied by the company that makes the vaccine, some are supplied by veterinarians, and some are supplied by the city or county. The Pittman-Moore Company supplied both rabies vaccine and the heart-shaped tags to go on the collar of a vaccinated dog.


**Figure 5.242.** Dog vaccination tag, 24.5 mm wide.

## *Private Dog Identification Tags*

Some private dog identification tags were used in the Roman Empire. They were used by some in England at the time of the settlement of Virginia and New England, and it would be no surprise to find them at the sites of early colonial settlements. The wealthy tended to use inscribed collars, while a simple tag with scratched words might be used by a less prosperous person who wanted to let people know to whom to return a lost canine. A worn coin with a hole was sometimes used for the inscription. Today, thousands of private dog identification tags are sold every day, usually with stamped-in or engraved names and phone numbers. The tag for Terryton Blanck, the dog of a man in Lakewood, California, is typical of the simple sort of tag with ***incuse*** stamped letters and numbers produced by machine to the customer's specifications.


**Figure 5.243.** Private dog identification tag, 27.5 mm wide.

## *Soldiers' "Dog Tags"*

While identification tags have been worn by soldiers of some countries for at least 165 years, and they were a common (though privately supplied) item during the US Civil War, 1861–65, it is not clear whether anyone called them "dog tags" then. Dog license tags definitely would have been familiar to some soldiers from both North and South, as some cities required them before 1861.The dog license system was very common in the United States well before military identification tags similar in appearance to dog license tags were officially introduced in the US military in 1906, so the soldiers naturally called them "dog tags."

In 1916, before US entry into World War I, regulations changed (in response to reports from the battlefields of Europe) to require that two identical tags be worn by each soldier—one to be taken by the person reporting the soldier's death, and the other to stay with the dead soldier. In 1918, serial numbers were added to the tags, making them all the more similar to the tags worn by dogs. The tag for Posey P. Kennedy, US Army, was issued in 1918. Posey is quite a rare name, particularly for a man, and among Kennedys appears to be confined to one extended family in Alabama.


**Figure 5.244.** WWI soldier's "dog tag," 30 mm.

A Posey Kennedy, born in Alabama in August, 1896, was a farm laborer at the age of thirteen in Oklahoma in 1910. He died in 1950 in Oklahoma and was buried under a grave marker that reports that he was a private in the infantry in World War I. He appears in several documents with different middle initials, but with the appropriate ages. This appears to be his dog tag, set aside sometime after he returned from the war, which made its way to an antique shop in California.

A surprising number of soldier's dog tags can be seen with bullet holes in them. The reason for this is not clear, particularly in the case of this dog tag for Thomas Harvey, of Unionville, South Dakota, who died peacefully at the age of seventy-seven in 1965, and whose grave marker records that he served in Battery D of the 174 Field Artillery, just as inscribed on the dog tag from 1918. The tag has been pierced by a .22 caliber bullet and then flattened again. It may have been sold, at some time, as the dog tag of a man killed in battle, with the bullet hole and the story raising the price of the collectors' item. Anyone who buys such items along with the sellers' tall tales may be interested in a practically new bridge for sale in a major eastern city.


**Figure 5.245.** Soldier's "dog tag" with bullet hole, 35 mm.

Dog tags with various distinctive features were used by the US Army during World War II and later conflicts, and in fact by most of the world's armies. Exhaustive information is available on the Internet at the click of a mouse, because collectors are joined by battle reenactors in their determination to get the facts straight about anything a soldier wore on his person.

## *Blood Type Tags*

In some countries, blood type is recorded on soldiers' dog tags. In others, separate tags have been worn carrying that information. A tag from the 1950s, produced by Anson L. Brown Inc. of Columbus, Ohio, is meant for someone with blood type O who is Rh positive. The tag was never inscribed with a name. In addition to soldiers, some others who might require transfusions (including hemophiliacs) have worn tags of this kind.


**Figure 5.246.** Blood type tag, 25 mm.

### *Medical Alert Tags*

There are many varieties of tags, worn on bracelets or necklaces that give notice of specific medical conditions so that the information will be available in an emergency. The "Medic Alert" tag shown has red enamel in the words and a caduceus on the obverse. Incuse lettering on the reverse indicate that the patient was diabetic and had a bad reaction to horse serum. A telephone number to call for further information is at the top, and the serial number applicable to the specific patient is at the bottom.


**Figure 5.247.** Medic alert tag, 30.5 mm.

### *Telephone and Power Pole Tags*

When wooden power poles or telephone poles in some states are chemically treated against termites and other pests, a dated tag is nailed onto the pole. Inspectors can then verify that the poles are treated, and the owners of the poles can plan future treatments. One circular tag dated 1958 showed that a pole was treated with "Penta," presumably a five-ingredient chemical preparation, by Pole Sprayers, Inc. This tag was used near Tucson, Arizona.

Another tag from 1967 was used by the P. T. Company, initials that match far too many pest control and chemical treatment firms, to show that poles had been treated with "G. L."


**Figure 5.248.** Pole "Penta" treatment tag, 1958, 25.5 mm.


**Figure 5.249.** Pole treatment tag from 1967, 26 mm.

The preparation's initials could stand for many things, and some day someone will figure it out and post it on the Internet where a search engine can find it. This tag, too, was used near Tucson. When they have been used, the tags are somewhat scyphate (cup shaped), as the head of the nail used to affix it to the pole forces the central portion of the tag into the wood. Most collectors and token dealers place the tags between two pieces of wood and hit the top piece with a hammer to flatten the tag and allow it to fit easily into a two-by-two coin holder. The patterning on the reverse shows that the metal has been bent, and then bent back again. After they have been flattened, they have been confused with many kinds of tokens and with washers. Archaeologists should avoid flattening these artifacts and instead leave them exactly as they are found, displaying their form after actual use. Not just found on or near lines of poles, they have also been observed still affixed to cutup poles that have been recycled into fences and walls.

## Checks

### *Tool Checks*

Tool checks date back at least 150 years, and probably longer. They are used in the tool cribs of factories and workshops to keep track of tools. A worker is issued (or at some places bought) tool checks, which are recorded in the worker's name. When a tool is taken from the peg or hook on which it is stored, the worker who "checks it out" places a tool check on the peg. The person in charge of the tool crib can see at a glance who has any given tool, and when the tool is replaced the worker takes back the tool check and pockets it until next time. A worker who lost a tool check was normally charged for it, sometimes many times the actual cost of replacement. Tool checks range from simple blank discs with numerals or letters scratched into them to ornate struck pieces bearing the company name and a stamped or engraved number. In older factories, some are worn down so far that little can be read. Some tool checks have been used for more than a century at the same old shop (for example at a railway repair shop), and others were used for very short periods before loss or replacement, often when the company changed its name.

When a shop shut down, or when a new style of check replaced an old set, the surplus checks have been sold for scrap, thrown in the trash, taken home by workers as souvenirs, given to children for play, or even sold to a coin dealer. Around an old factory or workshop, a few tool checks are likely to be found in the soil or in cracks in the floor, but it is wise to be cautious in drawing conclusions from finding one tool check anywhere.


**Figure 5.250.** Tool check from Pennsylvania, 35 mm.

The first plant in America built just to make steel grew up together with the village of Baldwin starting in 1866. In 1880 the village became the Borough of Steelton, Pennsylvania, centered on the Pennsylvania Steel Company mill next to the river. In 1917 the mill was sold to the Bethlehem Steel Corporation. At some point over the next few years, new tool checks were introduced. On the reverse of the check, a bit worn on this example, are the words "Loss of this check must be reported to employment office immediately. Charge will be made if lost or not returned upon leaving the service of the company." The company was not so worried about the cost of the check, but about the cost of an expensive tool that could be stolen by someone fraudulently checking it out with another worker's tool check.

### *Explosives Checks*

A variant of the tool check is the explosives check. In this case, the tool is not returned because it has been destroyed. Before the rise in numbers of business forms, and before near-universal literacy among mine workers, a check would be given to a worker who needed explosives, and each check would be turned in to the explosives crib to obtain a charge of explosive. Later, signed forms would replace checks to control and record the use of explosives.

This check from Industrial Collieries Corporation Mine No. 43 was used at Carolina, West Virginia. It was good for one stick of powder. Similar tokens from various mines and construction sites were good for dynamite or other specific explosives, for blasting caps, or for electric igniters. Such checks were generally out of use by World War II.


**Figure 5.251.** Explosives check, 28.5 mm.

### *Towel Checks*

In some locker rooms, generally introduced after a problem with the return of towels, towel checks encouraged the return of wet towels. When a towel is returned wet, a token is given out, which is good for a dry towel next time a shower is taken. The towel check from San Jose State College was used sometime between 1935, when the college name was adopted, and 1972, when the name was changed from college to university.


**Figure 5.252.** Towel check, 32 mm.

## Sequins

Piercing coins with holes and affixing them to clothing is a practice almost as old as coins themselves. This practice is especially common when the clothing is to be worn by a dancer, as the sound of the coins ringing against each other is a musical accompaniment to the dance. Some Middle Eastern forms of dance, quite old in general form though the specific dances may be recent, are often accompanied by the music and visual flash of sequins. Originally, a sequin was a thin gold coin, but modern sequins (especially in North America) are imitation gold coins that may be made in either the old world or the new. Probably from the old world, this crude imitation of a Turkish gold coin of 1827–32 has not yet been pierced. It was probably made in the 1960s and was part of a wholesale lot imported into the United States for use by manufacturers of "belly dance" costumes.

**Figure 5.253.** Imitation of a Turkish coin, 19.5 mm.

**Figure 5.254.** Holed sequin from North Africa, 13 mm.

A sequin from about the same time period, with its neatly drilled hole, was probably imported from North Africa for the same use. It is a rough imitation of a Tunisian coin of about two centuries ago, but is struck as a bracteate; the design on the reverse is the mirror image of the obverse design.

There is a large Hmong community, immigrants from the Lao hill country, living in the United States. Their dance costumes feature silver or silver-colored coins from French Indochina or, in recent years, reproductions of those coins. The coin dated 1937 with a hole at the top of the obverse states that it is 680 thousandths in silver ***fineness*** and that it weighs 5.4 grams. The original coin actually has this weight and fineness.

But this is not an original; it is a recent imitation, and it weighs 3.2 grams. It is very unlikely to have the stated fineness of silver, if it contains any silver at all. Others may use these too, but in the United States these are mainly used by Hmong immigrants and their families.


**Figure 5.255.** Imitation Indochina coin, 25 mm.

## Medals

### *Souvenir Pieces*

#### Fair Medals

At every major international fair and exhibition, souvenir medals have been available to fairgoers. Sometimes the medals have been struck at the fair itself, within an exhibit. The international exhibition in Philadelphia on the occasion of the Centennial of the Declaration of Independence was held in 1876. This medal with an obverse view of Independence Hall and the date 1776 has a reverse with the date 1876, and the words "struck within the international exhibition."


**Figure 5.256.** Centennial Exhibition medal, 1876, 24 mm.

The World Columbian Exhibition in Chicago that started in 1893 featured a great many medals and tokens, including some showing most of the fair buildings. The Machinery Hall is featured on the quarter-size medal with Columbus on the obverse.

**Figure 5.257.** Columbian Exhibition medal, 1983, 24 mm.


**Figure 5.258.** Medal of St. Louis Fair of 1904, 38 mm.

The St. Louis Fair of 1904, the Louisiana Purchase Exposition, was an occasion for the issuance of another large group of medals. This example is a presentation piece, struck for the members of the Missouri Commission to give out to dignitaries. A very large number of people received them, and it is not a rare medal. Some have been misled by the "State of Louisiana" inscription. Those are just the middle three words in a five-word phrase, "Empire State of Louisiana Purchase," a reference to Missouri.

At the Century of Progress Exhibition in Chicago, starting in 1933, there was considerable emphasis on Abraham Lincoln, who though born in a log cabin in Kentucky was a resident of Illinois when he was elected President. A Lincoln exhibit featured a log cabin, and it is shown on the medal sold at the exhibit. As people from all over the country came to these and other international fairs, the medals from the fairs were distributed all around the country. While the medals are conventionally organized by the state in which they were issued, it is no more surprising to find one of these medals in Idaho or Florida than in the state where it was originally sold.


**Figure 5.259.** Lincoln medal from 1933, 30.5 mm.

#### Scenic Medals

The Empire State Building is an example of the sort of sight memorialized on medals struck to sell to tourists. When this medal was sold, it featured the tallest building in the world. Its height is 1,250 ft. or 381 m. On the reverse is a representation of the Statue of Liberty.


**Figure 5.260.** Empire State Building souvenir medal, 30 mm.


**Figure 5.261.** Grand Canyon scenic medal, 38 mm.

A natural wonder often featured on medals is the Grand Canyon of the Colorado River, whose depth in Arizona averages 1 mi., or 1,600 m, more than four times the height of the Empire State Building. This medal has a view from the rim of the canyon and on the reverse shows two men in a small boat running the rapids at the bottom of the canyon. It was originally minted for the National Parks centennial in 1972 but was sold for some years to tourists. The date on the obverse, 1919, is that of the official designation of Grand Canyon National Park. Most scenery medals are sold to tourists and travel widely.

### Elongated Coins

***Elongated coins*** were popularized at the Pan-American Exposition of 1901 at Buffalo, New York. One of the many designs produced at that fair was a vertical representation of the Electrical Tower, whose bright lights mesmerized visitors from farms where electricity would not be available for decades.


**Figure 5.262.** elongated cent, 1901, 19 mm wide.

An elongated coin is produced by squeezing a cent or other coin between two circular wheels, one of which has an engraved die to impress a design into the coin. Machines for making these "smashed pennies" are found at many tourist attractions. A cent goes in one slot, two (or sometimes more) quarters go in other slots, and the customer turns the crank and produces the souvenir. Some newer machines omit the crank.


**Figure 5.263.** Elongated cent from a zoo, 33.5 mm wide.

The elongated wheat-back cent featuring a fruit bat from the Central Park Zoo in New York City was kindly produced by Shushannah Akin for her father in January, 2005. If it ever enters the archaeological record, it will do so in California, across the continent from its place of origin. Elongated coins travel far and travel quickly, and cannot be expected to be more common near their place of production than in cities far away.

### *"Made from" Medals and Tokens*

Hundreds of different pieces made from parts of captured cannon, famous ships, spaceships, and many other metallic objects have been produced and sold or given away, sometimes in very large numbers. If the original item is not large, the medal is made by including a small part in a large melt of metal, of which most is from other sources. In 1918 the US Treasury Department gave out medals to everyone who participated in selling Liberty Loan bonds—a very large number of people. The medals, as noted on the reverse, were made from captured German cannons. These medals were distributed widely around the country. When found in the soil, these iron medals are the brown or red color of iron oxide, but those that have not been buried are often still shiny from the thin nickel plating.


**Figure 5.264.** Liberty Loan bond medal, 30.5 mm.

Also found around the country are medals with the date 1797, stating on the reverse that they are made from parts of the frigate *Constellation*, first ship of the US Navy. These medals were sold for one dollar apiece (several times the cost of production) in 1961 to raise funds for the restoration of the ship on display in Baltimore Harbor. They were struck from some of the many large copper spikes that held the old ship together. But later in the restoration work, proof was found that the ship did not date to 1797 after all.


**Figure 5.265.** Frigate *Constellation* medals, 32 mm.

When the original Constellation was broken up in 1853 at Norfolk, Virginia, a completely new ship of a different design was built in the same yard, and given the name of the old ship. It was the Navy's last sail-only ship. The 1854 ship is the one on display in Baltimore. Baltimore boosters claimed that the new ship was really the old one, rebuilt. Historians have now proven them wrong (Wegner, Colan, and Lynaugh 1991). Despite the date being wrong, the medals were sold at the Constellation for at least thirty years, the price being considerably higher in the 1980s than in the 1950s. These very common "made from" medals are found everywhere in the country now, and many have been offered and sold online for remarkably high prices—represented as medals from 1797, which they are not.

The production of "made from" medals has continued. A medal showing the Apollo-Soyuz joint Soviet-American space flight of 1975 was made from a batch of aluminum that included a little aluminum from both the *Apollo* and the *Soyuz* spaceships. This medal is inscribed in both English and Russian, and was sold in both countries. With an effective promotion job, many of these medals were sold, and though most are still in collections, inevitably some have entered and will continue to enter the archaeological record.


**Figure 5.266.** Medal from parts of *Apollo* and *Soyuz*, 38.5 mm.

## *Large Coin Reproductions*

Very large coin reproductions have been produced and sold as souvenirs, decorations, and toys. Canada has made some coins of nickel, including a 1951 circulating commemorative five-cent piece noting the 200th anniversary of the first production of pure nickel. Nickel has acquired many new industrial uses since 1751, and the mines on the Laurentian Shield have become very important to Canada. A number of oversize copies of coins, along with some newly designed medals, were minted out of nickel during the 1950s and later. The medal shown, a little larger than a silver dollar, is just an enlargement of the 1951 nickel coin with the added words.


**Figure 5.267.** "Big Nickel" from Ontario copies coin, 38.5 mm.


**Figure 5.268.** Indian Head California "cent," 74 mm.

While other denominations are seen, the Indian Head cent was particularly popular as a model for large scenic or souvenir pieces sold at tourist shops. One of the later of this genre is the large "California" cent, probably produced during the early 1960s, and just the right size to fit on a man's palm. Earlier pieces go back to the end of the nineteenth century.

More recent oversize coins are used as toys, paperweights, or decorations, and generally lack commemorative or identifying inscriptions. The big dime is about ten times the diameter of a real dime, and coated with a zinc alloy to give it a silvery color. Most of the recent examples come from China. Despite their large size, their common use as toys means that many will be lost in the soil.


**Figure 5.269.** Big "dime" made in China as toy, 78 mm.

### *Other Commemorative and Fundraising Medals*

*So-called dollars* are medals that meet a certain set of parameters, as outlined by Hibler and Kappan in their book *So-Called Dollars* (1963:6). Some fit into other categories as organized here. They are noted as a category because these are some of the best-researched medals issued in the United States, and if one is found, the detailed information in Hibler and Kappan can help with identification and analysis. Hibler and Kappan state the criteria as "medals of an exposition, commemorative, monetary and kindred nature." But certain limitations were imposed that excluded most medals that would fit in those categories. Here are their detailed parameters.

1. United States only.
2. Minimum diameter – Size 21 (1-5/16 inch or 33mm).
3. Maximum diameter – Size 28 (1-3/4 inch or 45mm); but silver Bryan Dollars are listed.
4. No holed or looped material unless also struck plain. Our Nos. 1–3 are sole exceptions.
5. No plastic, fiber or similar material unless issued also in one or more metals.
6. No purely presidential or political medals.
7. No school, college or athletic medals; no coin club or US Armed Forces medals.
8. No calendar or store cards; no trade tokens or emergency money.

Except for five earlier medals, from 1826 to 1860, all the so-called dollars were made between 1861 and 1961. There are fewer than one thousand of them, even including all the varieties and different alloys. A single example from this category is shown here: the medal from the Panama-Pacific International Exposition from 1915. The female figures represent the Pacific and Atlantic, while Mercury (symbol of commerce) on the obverse says "On! Sail On!" These are the last words of the poem "Columbus," by the California poet Joaquin Miller (1837–1913). All the so-called dollars are favorites of collectors, and few can be expected to turn up in the archaeological record.

**Figure 5.270.** Panama-Pacific medal, a "so-called dollar," 38 mm.

## Modern Municipal Currency

Modern municipal currency, at least in theory, is accepted by the merchants of a particular city or town until a certain date, and thus it is money until that time comes. In practice, almost all the municipal currency in Canada and the United States is really issued to raise funds for some local organization, and few of the "coins" are redeemed before their expiration date. Some of the earlier pieces, before the mid-1960s, were actually struck in sufficient numbers to circulate, and could be found in circulation for a time. This was particularly true of smaller pieces with face values below fifty cents. An example of a municipal "coin" with a "25¢ value" is the 1959 St. Lawrence Seaway opening commemorative from Cornwall, Ontario. It failed to specify an expiration date, and got the city fathers into a little trouble.


**Figure 5.271.** Cornwall, Ontario, Municipal "coin," 1959, 31.5 mm.

For the last half-century, pieces of municipal currency have been sold as souvenirs and collectors' items, and the mintage is adjusted to make sure that the market is not flooded. An early municipal dollar from Canada is from Prince Rupert, British Columbia, with a currency value that lapsed at noon on the last day of 1960.


**Figure 5.272.** Municipal dollar, 1960, British Columbia, 35 mm.

Later examples are carefully designed and struck for appeal to collectors, and may have cartoons, realistic views of wildlife, or depictions of colorful local customs. The dollar from Jasper, Alberta, shows a cartoon-style bear on the obverse, the Jasper mascot for tourist publicity purposes. On the reverse, this 1979 piece features a realistic rendering of a grizzly bear and her cub. Since even before the "toonie" two-dollar coin entered circulation in 1996, most Canadian municipal currency issues have a face value of at least two dollars.


**Figure 5.273.** Jasper, Alberta, dollar, 32.5 mm.

The earliest municipal currency pieces issued in the United States were good for small sums. As an example, a plastic token, in a light-brown color that may have been intended to look like wood, was used in Guernsey County, Ohio in 1948. The face value was only five cents, and it was "void after Sept. 6, 1948."


**Figure 5.274.** Souvenir token, 33 mm.

The county was not formed until 1810, so the sesquicentennial was not of the county but of the first ferry service crossing Will Creek in Ohio, in 1798, and of the first few Euro-American settlers who ran the ferry. The first bridge authorized by the legislature of the Northwest Territory was built to replace the ferry in 1803. Some immigrants from the Island of Guernsey in the English Channel, who found conditions on Guernsey difficult during the Napoleonic Wars, arrived in 1806 and for several years afterward. When the county was formed, it was named for their homeland. The "souvenir token" inscription indicates that it was not seriously intended as currency.

A later "Yellowstone Park Centennial Dollar" was redeemable at two banks in Red Lodge, Montana, before the first day of 1973. Dated 1872–1972 on the reverse, it shows the switchbacks on the Beartooth Highway. The traditional Native American residence on the obverse is presumably the "red lodge" that gave the settlement its name. Metallic municipal currency is rarely made today in the United States, as the cost of the tokens is too high to allow organizations to make much money on them. The expiration dates on municipal currency allow them to be dated very precisely.


**Figure 5.275.** Yellowstone Park Centennial Dollar, 38.5 mm.

## Military Medals and Related Material

### *Military Medals*

Although most military medals have been issued to US soldiers for World War II service, some have been issued for other reasons as well and are found in the ground occasionally. They are all easily identified through websites of military authorities, veterans' organizations, and medal collectors. The usual size found is about the size of a half-dollar, but most medals come in a smaller version too. Medals awarded for outstanding personal heroism are rare, but medals for service in a particular theater of war were given to almost everyone involved and are common.


**Figure 5.276.** Military medal, 31.5 mm.

The medal dated 1945 with Mt. Fuji on one side and a bridge in Germany on the other, was given to almost all the troops who participated in the occupation of Japan and Germany after victory. The two most common times for a medal to enter the archaeological record are shortly after the war, when many veterans moved and sometimes lost personal belongings, and at the end of the veteran's life when personal effects may be disregarded by others.

Navy medals are less common than Army medals, but with the Navy too, the World War II medals are the most common. Less common is the Navy Good Conduct medal awarded to Cecil Douglas Cannell in 1933. The peacetime Navy was not large. According to the US Census Cannell was born in Colorado in 1907, and the Social Security Death Index reports that he died in Colorado in 1978. So he turned twenty-six the year he received the medal.


**Figure 5.277.** Navy Good Conduct medal from 1933, 32 mm.

### *Challenge Coins*

Challenge coins are now an integral part of military culture. Legends are told about them, but most are either purely imaginative or otherwise nonfactual. Other aspects of military (and broader) culture may not be checked so easily, but in the case of challenge coins the artifacts themselves exist, and can speak for themselves. As might be expected, rituals involving drinking are heavily tied up with the challenge coin story. In former times, that is, up to World War II, soldiers used coins to determine whose turn it was to buy a round of drinks. A flipped coin was often replaced by a "Busty Betty" flipper during World War II, but the heads-or-tails choice was the same as it had been for

the Roman Legions. During World War II, the "short-snorter" became common. These were banknotes, or rolls of banknotes glued or taped together, bearing the signatures of multiple people, including soldiers, nurses, distinguished visitors, and so on. Complex rituals involving short-snorters and drinks arose. Each, after a week or so, had the force of ancient custom.

During the occupation of Japan, and then increasingly during the Korean War, military units began to strike small medals honoring their units. By the time of the Vietnam War, this custom had taken hold, more so in some parts of the military (including the Air Force) than in others. Around this time, the name "challenge coin" was first heard. The way the custom works, service members who meet in a bar will accept a "coin call," which (depending on the service and local custom) may consist of showing a coin, rapping a coin on the bar, or even throwing the coin on the floor. The one who has no challenge coin pays for the drinks, or if everyone has them, the person who made the call pays for the drinks. There is much more to it than that, of course. Some units' challenge coins are more prestigious than others, and exact ranking provides endless subjects for discussion, or enough drinks having been consumed, perhaps for direct physical action. A challenge coin from 1979 from Los Angeles is the "think war" coin from the 311th COSCOM, or Corps Support Command. It has "Provide, Maintain, Sustain" on the reverse, with an emblem including three clockwise-pointing directional arrows.


**Figure 5.278.** Support Command Challenge coin, 38 mm.

Challenge coins are not generally purchased with military funds, but rather by officers, groups of soldiers, or generous veterans. Some are now sold by dealers who have them minted and sell them at gift shops or on the Internet. One such challenge coin is intended for use by munitions specialists (broadly defined) of various Air Force units.

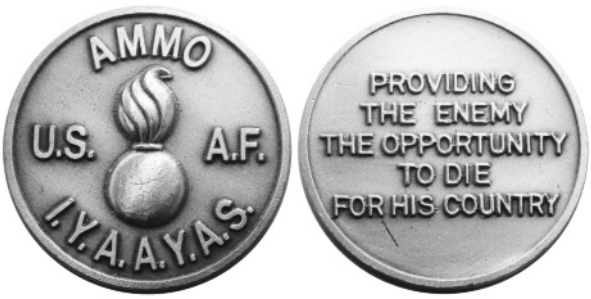


**Figure 5.279.** Munitions specialists challenge coin, 39.5 mm.

The nickname of the job is "AMMO," as inscribed on the piece above the bomb. For some reason, the bomb on the token is nicknamed a "pisspot" by ammo specialists, possibly in response to crude criticism of the design by others. A hint that this piece is not fully official is the line of initials at the bottom of the obverse, "I.Y.A.A.Y.A.S.," which turns out to stand for "If you ain't Ammo, you ain't shit." This is reported to be a common cry by ammo folks at banquets and the like and has been banned a number of times by the Air Force top command. On the reverse is a mission statement in typically sardonic noncommissioned style: "Providing the enemy the opportunity to die for his country."

At higher levels, challenge coins are traded between commanders or given by commanders to more exalted officials. Bill Clinton, as Commander in Chief, put together one of the largest collections ever assembled. Lobbyists and officials of corporate military suppliers caught on and produced their own challenge coins. Many Members of Congress and now most US Senators have produced their own challenge coins, normally either given to selected soldiers and officers during visits to military facilities or traded with top military officials. The challenge coin of US Senator Ron Wyden of Oregon is marked "Awarded for Excellence," and is apparently intended as a presentation piece.


**Figure 5.280.** Challenge coin of Senator Ron Wyden, 44 mm.

While the challenge coins of high officials may be kept secure by recipients, such tokens of military units, due to their place in drinking rituals, are sure to be lost in substantial numbers.

## *Soldiers' Souvenirs*

Soldiers' souvenirs can be misleading when recovered from the soil. Some of the things that soldiers bring home look as though they belong elsewhere, and conclusions based on false assumptions can prove embarrassing. One classic case is the postulated Roman occupation of Scotland. Over the course of the nineteenth and early twentieth centuries, many Roman coins turned up in various spots in Scotland. This caused some to theorize that the Romans, without leaving a trace in the written historical record, must have spent some time north of England. But when numismatists analyzed the coin finds, another story entirely emerged. The coins were later than the Roman occupation of Britain and were from Eastern mints. They had returned to Scotland with crusading soldiers, many centuries after the coins were struck, as souvenirs of the Holy Land. Just so have soldiers brought souvenirs home from foreign (or domestic) wars to places all over the United States and Canada. Plains Indian artifacts in Maine, Mexican weapons in Connecticut, Philippine coins in Illinois, and German coins in Toronto all are souvenirs taken from their places of origin in the pockets and knapsacks of military men.

Also commonly found in any US or Canadian community are tokens, medals, and similar items used or made in war zones. The people of Liege, Belgium, presented little aluminum medals to English-speaking troops who helped drive the Nazis out of their city. The medals show a monument and are inscribed with an English "thank you" and the date 1944, the liberation year. The medals were crudely struck and must have been made very hastily over a night or two in a local factory.


**Figure 5.281.** "Thank you" medal, 1944, 26 mm.

An item that must be unique came out of the fierce battle for San Vito Chietino in eastern Italy in December, 1943. A soldier with a watch fob bearing the great seal of the City of New York had it engraved in large figures on the back "San Vito Chietino/Italia/Dec 4 - 44."


**Figure 5.282.** New York watch fob, 39 mm.

This is the anniversary of the intense battle the allied forces waged against the Germans across this part of Italy. The soldier may have been one of the injured who were nursed partway back to health in the field hospital at San Vito during the weeks after the battle, or he may have been uninjured, but either way he appears to have returned to the area a year later and provided the watch fob to a local craftsman for engraving. Whatever the story behind it, finding such an artifact in a North American location lets us know that someone in that vicinity fought in Italy. There were no civilian tourists from New York in Italy in 1944.

A very common souvenir for a soldier to bring back from Vietnam was an amusement token used in machines in clubs, whether EM clubs for enlisted men, NCO clubs for noncommissioned officers, or officers clubs. Some tokens were good both in machines or at the bar, and others were only good for drinks and refreshments. An aging officer with a good memory might be able to describe the precise function of the twenty-five-cent token from the officers open mess at Nhatrang Air Base some forty-five years ago.


**Figure 5.283.** Token from Officers Open Mess, 24 mm.

## Organizational Medals

### *Masonic Medals*

Masonic medals are of three basic types. The best known are the R. A. M. Chapter medals, or "pennies," issued at one time by hundreds of chapters across North America (and some on other continents). Despite often bearing a denomination, these were not tokens. The denomination was entirely symbolic.

These were made after the Civil War, and most were made by about 1925; though some chapters used their supply for years afterward. Some were carried or kept by members just as they were minted, and some were engraved with names or initials, and sometimes dates. The chapter penny from "Lincoln Chapter No. 147 R. A. M." bears the date 1871, but that is the date the Lincoln, Illinois, chapter was chartered, not the date of minting (King 1972:57). Typical Masonic symbols are found on both sides; they are mostly derived from the signs and tools of "operative masons," the construction workers who have used stone to create buildings and monuments over the last few millennia.


**Figure 5.284.** Illinois Masonic token, 30 mm.

With the keystone on the reverse, but without any inscription around the edge, the chapter penny from Oklahoma City, Oklahoma, has words rather than symbols on the obverse. Cyrus Chapter 7, R. A. M., was chartered on September 6, 1890. Again, the penny was minted some years later, probably between 1910 and 1920. As it, like the Lincoln chapter penny, is listed in *Masonic Chapter Pennies* by Edward A. King, it was available to him in 1930 (King 1972:231).


**Figure 5.285.** Oklahoma Masonic penny, pre-1930, 31 mm.

The third example of a chapter penny is from California and is struck in silver. It is stamped in the center with the initials of a Masonic brother, "CHR." The reverse is a rather inexact copy of an ancient shekel from Judea, from the second year (67/8 CE) of the First Revolt against the Romans and is inscribed "Shekel Israel" in ancient Hebrew script (King 1972:18). This piece belonged to a member of the "Owens Valley Chapter No. 124, R. A. M."


**Figure 5.286.** Owens Valley penny copies shekel, 27.5 mm.

A second kind of Masonic token is a commemorative or special piece not normally used as a chapter penny. Most commemorate (or help finance) the construction of lodges or mark notable anniversaries. A medal sold as a souvenir to visitors to the George Washington Masonic National Memorial at Alexandria, Virginia, shows the building dedicated in 1932, the bicentennial year of Washington's birth.


**Figure 5.287.** Commemorative Masonic medal, 31 mm.

Another commemorative piece was issued on an anniversary of a lodge. With at least nine specific symbols on the obverse, the medal notes the 75th anniversary (in 1986) of Inglewood-James Kew Lodge No. 421 F. & A. M. Despite the Inglewood name, the lodge is located in neighboring El Segundo, California.


**Figure 5.288.** California Masonic anniversary medal, 31.5 mm.

The third kind of Masonic token is inscribed only in Hebrew, and mimics an ancient shekel. These have been used not only by masons, but also by members of some other secret societies and Christian (but not Jewish) religious organizations for several hundred years. Some are copies of blundered fantasies, often even using the wrong Hebrew script (the "modern" script, a mere 2,400 years old, rather than the "ancient" script that was actually used on coins two millennia ago, even though it was no longer used for most other things). Some are readable copies of actual ancient coins, though they are not meant to deceive, and they differ in many ways from the originals.

The example shown here is an imitation shekel of the second year of the First Revolt (67/68 CE) that cannot be mistaken for the real thing, because it is made from aluminum! The obverse shows a cup, with "Shekel Israel" around the edge, and the year above the cup. The reverse shows three pomegranates on a stem, with the Hebrew for "Jerusalem the Holy" around the edge (King 1972:311).

**Figure 5.289.** Aluminum copy of ancient shekel, 24 mm.

## *The Klu Klux Klan*

The KKK, a mass organization devoted to racism, religious bigotry, and antilabor and anti-immigrant agitation, was founded in 1915. It took its name and a few of its rituals from a violent post-Civil War group of former Confederate soldiers that spread terror among freed slaves and their white allies in order to put the former slave owners back in control of Southern states. While the Klan gained a measure of political power in many places in South and North alike during the early 1920s, by the end of the 1920s it was in retreat, as its parades met strong resistance, and its top officers were revealed as thieves. Most branches were disbanded, and the KKK was not reborn publicly until the late 1950s.

As often happens when an organization is forced underground, many of its symbols also went underground in the most literal sense. Reports from metal detector users indicate than many Klan tokens and medals have been found buried near houses in places where the Klan was once strong. One that often turns up is a dollar-sized medal bearing seven symbols, seven mostly cryptic slogans, and three dates. The date1866 represents the foundation of the original terrorist group by Nathan Bedford Forrest; 1915 is the date of the Klan's refounding in the twentieth century; and 1922 is the date this piece was struck.


**Figure 5.290.** Klan medal of 1922, 35 mm.

Symbols include the Constitution (much admired by the Klan except for certain amendments), the Holy Bible, and a cross superimposed on the Constitution as a sign that they believe the United States ought to be an entirely Christian nation (well, their kind of Christian, of course), along with a fasces, a flag with enough stripes but far too few stars, and an open hand. Their slogan "One country—one flag—one language" contrasts rather oddly with a slogan on the reverse, "non silba sed anthar" (not for self, but for others), in the Latin language.

### *Coin Club Medals*

Coin club medals, as one might expect, number in the tens of thousands of types. More medals have been issued by coin clubs than by any other type of organization. Most such medals are kept by collectors or dealers, but some have been minted in large numbers and find their way into the hands of the general public, the playing children of the general public, and then into the archaeological record.

Some medals of numismatic organizations date back to before the Civil War, but they were scarcer than more recent examples and are not recovered from the ground. In the 1920s and 1930s, as coin collecting became a mass hobby, more were issued in larger editions. The simplest such medals, like the one from Buffalo, New York, in 1930, simply have the name of the club, a date, and a little additional text, in this case the names of the officers. A token or medal with letters and numbers alone cost much less than one with a portrait or a building.


**Figure 5.291.** Numismatic club medal, 28 mm.

By the late 1960s, coin club medals were larger, and during the 1970s most medal-issuing clubs shifted to medals a little larger than a silver dollar, the size of a silver round bullion piece. The normal procedure was to make one set of dies, and strike some silver medals with a weight of one troy ounce, and strike others from the same dies for wider distribution in copper alloys and sometimes in aluminum. The medals were usually associated with coin shows. The California State Numismatic Association issued the Lick Observatory medal at its 114th semiannual convention in San Jose in 2004. When costs rose sharply during the early 2000s, most clubs stopped issuing medals.


**Figure 5.292.** Lick Observatory medal, 38.5 mm.

### *Other Organizational Medals*

Other organizational medals have been issued by thousands of organizations, sometimes for publicity, sometimes as awards, sometimes to sell for money, and sometimes for reasons that may be obscure to nonmembers. Rotary International struck "The Four-Way Test" medal, a pocket reminder of their standards for "the things we think, say or do."


**Figure 5.293.** "The Four-Way Test" medal, 33 mm.

A common Boy Scout medal is intended to be placed in the scout's left pocket in the morning, and the scout is instructed to "secretly transfer me to your right pocket each day after your good turn has been done."


**Figure 5.294.** Scout Medal, 36.5 mm.

## Personalities Medals

Series of inexpensive medals showing presidents of the United States have been produced since the 1920s. Some were given away as premiums, for example, by Shell service stations and in Cracker Jack boxes. Others have been sold, sometimes as sets and sometimes in units smaller than full sets. Some were intended for children, some for adults. There are many other medals for the most illustrious presidents, but a few presidents (Millard Fillmore or James Buchanan, for example) are really only honored in sets. More expensive versions of some of these medals were struck in silver and even gold, but it is the bronze, aluminum, and other base metal versions that are


**Figure 5.295.** Osborne presidential medal, 29.5 mm.

found in the ground, in some cases in considerable numbers. From the early 1930s comes a set in aluminum with a clear reverse inscription in small letters "The Osborne Register Co." of Cincinnati, Ohio. President William Henry Harrison never had a chance to earn the approbation or reproach of historians, as he only served thirty-one days as president in 1841 before dying of pneumonia.

Another Osborne medal, smaller and struck in bronze, shows Millard Fillmore. Fillmore was elected vice president in 1848 and became president when Zachary Taylor died in 1850. He rammed through the Compromise of 1850 that expanded slavery. He was never forgiven by his own party members for signing the Fugitive Slave Law and could not win the Whig nomination in 1852. Deservedly obscure, he is little known today.


**Figure 5.296.** Bronze Osborne medal, 25 mm.

A set of aluminum presidential medals was given out individually at Shell service stations in 1968, and recipients of some "winner" medals were able to collect a full set of bronze medals of similar design struck by the Franklin Mint. One medal from this common set shows James Buchanan, who is always a high scorer when historians are surveyed about which president was the worst ever. The country faced many problems when he took office in 1857, and he managed to make almost all of them worse before handing over the fragmenting country to his successor Abraham Lincoln.

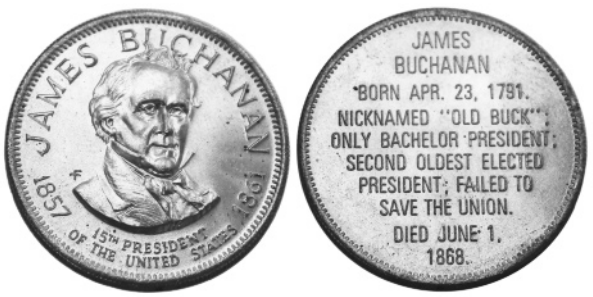


**Figure 5.297.** Shell presidential medal, 25.5 mm.

A set of plastic presidential tokens was issued in the mid-1950s, and it ended with Dwight D. Eisenhower. The other presidents all have two dates on their tokens, the date they were inaugurated and the date they left office. Eisenhower's token only has one date, 1953, because at the time the set was issued, he was still in office. This is a common feature of most sets of presidential medals and tokens that the president with only one date is the president during whose term the set was issued.


**Figure 5.298.** Plastic Eisenhower piece, 27.5 mm.

There are many medals for George Washington, and many for Abraham Lincoln, but there may be as many for John F. Kennedy. After his assassination on November 22, 1963, medals honored him in scores of countries, and just about anyone in the United States who minted medals included one, or a dozen, or even fifty different designs for Kennedy. But there were only a few medals made for Kennedy in his lifetime. One is the medal showing the White House on one side with the date of his inauguration, and Kennedy on the other with his name, the fact that he was the 35th president, and the year he took office. The medals were sold in souvenir stores in Washington, DC during Kennedy's life. On those minted after his death, the date "1963" was added to the right of his bust.


**Figure 5.299.** Kennedy medal, 35 mm.

During the late 1960s in Canada, Shell service stations gave out zinc medals for Canadian prime ministers with the House of Commons on the reverse, and they may be found either as plain zinc or as rather badly gilded zinc. All prime ministers were included, even Charles Tupper, who only served sixty-eight days before his party lost the 1896 election. During Tupper's long career in politics, he managed to take both sides of almost every question facing the country. He was defeated in 1896 because he argued both sides of the Manitoba Schools Question in each speech—whether to extend state support to French Catholic schools, as well as to English Protestant schools. He personally opposed aid to Catholic schools, but


**Figure 5.300.** Canadian Shell medal, 31.5 mm.

endorsed extending that aid as a political position. The voters on both sides were irritated by him, and his party was defeated. The zinc medals are sometimes found in the ground where they tend to corrode and become difficult to identify.

## *Election Medals*

Election medals are an important subset of medals honoring political figures. They were sold to supporters or given away to voters during an election campaign. These can be helpful to archaeologists, as they can usually be dated to a period of a few months in one election year and tended not to circulate after the election. They can also give clues to the political sympathies of the residents of a place, which in turn can provide clues to economic status, ethnic background, and even religion. Presidential elections have produced such partisan pieces regularly since 1800. Before pin-back badges, a supporter of a candidate would use a straight pin to fasten a holed medal to a collar or other piece of clothing. The medal for James Blaine and John Logan pushed their candidacies for President and Vice President in 1884. Sadly for Blaine and Logan, the election is chiefly remembered today as being the first time Grover Cleveland was elected President.


**Figure 5.301.** Campaign medal, 1884, 26 mm. Courtesy of Phil Moore.

Candidates for almost every other possible office, from Governor or Senator on down to party district committee member, have been featured on medals, tokens, and wooden nickels. The campaign of Louis L. Emmerson for Illinois Secretary of State gave rise to an aluminum medal in 1916. He was elected, reelected twice, and then elected Governor for a single term in 1928. This token represents a very early use of the slogan "lose a minute, save a life" that has been used in auto safety campaigns ever since.


**Figure 5.302.** Illinois campaign medal, 30 mm.

## *Military Leaders*

Military leaders are often shown on medals and tokens, usually during a short period in which they are regarded as public heroes. Ulysses S. Grant and Robert E. Lee are featured on medals 150 years after their last battles, and *Art of War* author Sun Zi, who wrote his book some 2,500 years ago, has been on medals from several countries recently. However, most military leaders have shorter periods of public recognition. Admiral George Dewey commanded the US fleet that defeated the Spanish Navy at Manila, and became a national hero. Upon his return to the United States late in 1899 he was feted at parade after parade around the country. Medals were made in his honor in many states and at many private mints, including the Whitehead and Hoag Company of Newark, New Jersey.


**Figure 5.303.** Admiral George Dewey Medal, 31 mm.

Their medal bears the slogan "welcome to our hero," and it was sold in various cities in advance of Dewey's visit. There was an attempt to run Dewey for President in 1900, and he even announced his candidacy but dropped out the next month. He was still well known when he died as still-serving Admiral of the Navy in early 1917. But by the end of that year, his memory was largely eclipsed by the action in the Great War that the United States had just joined, and he is better known by medal collectors today than by the general public.

## *Actors*

Actors are usually shown on medals and tokens issued in connection with particular productions as publicity for the show or film. As part of a series issued by United Artists to promote their first Rudolf Valentino film, many theaters across the United States distributed medals showing Valentino as Vladimir Dubrovsky in *The Eagle*.


**Figure 5.304.** Rudolf Valentino publicity medal, 32 mm.

This example is from the Liberty Theatre in Roseburg, Oregon. All the medals are scarce, as most have been lost over the years. Archaeologists should be alert for them at sites in many states as they can be dated to a single day. The local premieres were in late 1925 and early 1926, and the exact date of each one can be found in back issues of local newspapers.

Another series of medals, in a smaller aluminum module, featured stars from at least three studios from the 1933–35 time period. Jack Oakie is featured as the star of *Too Much Harmony*,

which was released in 1933. While other forms of advertising are more common, additional medals and tokens featuring actors are still being issued.


**Figure 5.305.** Jack Oakie medal of 1933, 24 mm.

### *Sports Figures*

Sports figures have been shown on medals for over two millennia. In the United States, there are numerous recent series of medals with football players, baseball players, basketball players, and now, increasingly, soccer or *futbol* players. The Los Angeles Lazers players from the early 1980s were shown on large aluminum tokens from the "El Pollo Loco" restaurant chain, including this one showing Juan Cardenas. Cardenas, an Argentine citizen, played with the Lazers from 1982 to 1986.


**Figure 5.306.** El Pollo Loco medal honors *futbol* star, 39 mm.


**Figure 5.307.** Daredevils good luck piece, 1933, 31.5 mm.

As people spent more time in automobiles than on horses, sports came to include auto racing, and an offshoot of that was the daredevil auto show. The B. Ward Beam Daredevils, promoted by the man who is credited with developing the auto daredevil show concept in 1923, were active in the 1930s and 1940s. The token from 1933 has the Lord's Prayer on the reverse, with the instruction "for good luck, carry this."

Kenesaw Mountain Landis (1866–1944) was a baseball player and manager on an amateur team in Indiana from 1883 to 1886, but the National Baseball Hall of Fame medal does not honor him as a player. After a colorful career as a lawyer and federal judge, he became the first Commissioner of Baseball in 1920; he held the position until his death in 1944. The medal celebrates the opening of the Hall of Fame at Cooperstown, New York, in 1939, and quotes Commissioner Landis on the reverse. So not only athletes can be honored on medals, but national administrators of sports organizations as well.


**Figure 5.308.** Baseball Hall of Fame medal, 1939, 31 mm.

## Disaster Medals

Natural disasters are a common theme for medals, not so much to commemorate the event as to honor those who survived or overcame its effects. The Alaska earthquake of 1964 destroyed buildings and took lives as far south as Crescent City, California, and the damage was limited chiefly by the sparseness of the Alaskan population. On the obverse, a symbolic fissure ruptures the state, and on the reverse is a seismograph record of the earthquake, with its very high Richter scale rating of 8.4.


**Figure 5.309.** Alaskan earthquake medal, 1964, 38.5 mm.


**Figure 5.310.** Medal notes 1965 Minnesota flood, 31 mm.

A medallic depiction of the record 1965 flood of the Mississippi River and its tributaries came from Winona, Minnesota, where the flood crest was about 84 cm above the previous record. At the top of the reverse the medal says "the town that saved itself," and on the obverse is a view of townspeople

building a levee with sandbags. While natural disaster medals are always produced after the event itself, and are thus not found in the resulting debris, lightning (or at least floods and earthquakes) may strike in the same place, and such a medal may be found in the debris from the next earthquake or the next flood; or when memories fade, children play with the medals, and they enter the national soil.

## Revolutionary Bicentennial Medals

In preparation for the Bicentennial year of 1976, the US Bicentennial Commission urged towns to produce books, medals, and many other artifacts to celebrate the two hundred years since the Declaration of Independence. Medal manufacturers advertised intensively, and made sure that their abilities were communicated to all the local bicentennial committees. Thousands of different bicentennial-themed medals resulted that were produced not only by such usual suspects as coin clubs, but by village, town, city, and county governments all over the country. Some were made in small numbers, but many were struck with donations or public funds in very large numbers. The medal from Abington, Massachusetts is a typical example, though made without stock dies or any shortcuts.


**Figure 5.311.** American Bicentennial medal, 37.5 mm.

Abington was originally Manamooskeagin (place of many beavers), whose first English settlers came in 1668. In 1706 it was renamed Abington by the Governor, who owed his appointment to the Countess of Abington and her influence with Queen Anne. The Abington name was retained when the town was incorporated in 1712. The original town of Abington is in England at the confluence of the Thames and the River Ock. The English town grew up around an abbey that was founded in the year 676. This means that (although the leaders of Abington, Massachusetts may not have known it) the medal was issued on the 1,300th anniversary of the town's English namesake.

In Santa Cruz, California, the mayor ordered the local Bicentennial medal but left office without distributing many, and they were placed in storage. Accidentally discovered a quarter-century later by another mayor, they were privately distributed by several people who put them in the hands of hundreds of others. They will be found, over the years, all over the Santa Cruz area, but not in places they were put in 1976. Most of them could not have been dropped or lost before the turn of the millennium.

A large series of small medals was organized by Jesse Patrick of the Patrick Mint from 1976 through 1979 to mark the Bicentennial. Shops, organizations, individuals, and whoever liked the idea of getting a thousand medals with a unique design


**Figure 5.312.** Bicentennial medal from California, 20 mm.

honoring the Bicentennial had the opportunity. The medals were about the size of a cent and used twelve different obverses, with most of the medals being struck in quantities of 1,000. There were a total of 1,341 different medals in the series, and as some ordered more than 1,000, the sum total approached one and a half million pieces. One thousand is not a large number for national distribution, but in some towns specific local tokens and medals from this series seemed to be everywhere, and they will turn up in sites. An example of this series is the Indian Head storecard from Sakiyama's of a Santa Clara, California, gift shop. The nearby Saratoga branch of the same shop used another obverse showing Independence Hall.


**Figure 5.313.** Santa Clara Bicentennial token, 20 mm.

## Flippers and Spinners

### *Flippers*

Flippers were used for gambling to determine order of play randomly, to play certain games, or to make any decision the user wishes; they are specifically intended to substitute for money in one of the most ancient roles of coins. Coins have been used as determiners of "heads or tails" for more than two thousand years in the Old World and were certainly used in this way immediately after Europeans brought them to the New World. A flipper shows a pair of linked opposites on the two sides: heads and tails, cock and bull, elephant and donkey, bolt and nut, or whatever fits with current or local conceptions and can easily be depicted on a token. Most are anonymous and can only be dated by style (or by context if found at an archaeological site), but many include wording related to businesses or other organizations for commercial or other reasons. An example of an anonymous flipper from around 1900 shows a rooster (the cock) on one side and a bovine (the bull) on the other.

A head and a tail may be the head and tail of anything, including a pig. Voss Truck Lines, headquartered in Oklahoma City, Oklahoma, and with offices in Chicago, St. Louis, Joplin, and Tulsa, distributed the "matching coin" in the early 1950s.

**Figure 5.314.** Cock and bull flipper, 31 mm.


**Figure 5.315.** Voss Truck Lines flipper, 25.5.

It has the head of a pig on the obverse, and the tail (and the rest of the backside) of the pig on the reverse.

By far the most common general category of flippers are those showing a young woman who has been called "Busty Betty" for at least seventy years. There are literally hundreds of varieties of this flipper, and some were made in very large numbers. The earliest are in the style of the early 1930s, though some may be older, and the latest are being produced somewhere today. Anyone who examines a large number of tokens will find Betty among them. These flippers are sometimes divided into two classes: "fair" and "unfair." The first, with Betty's hands on her head, is a "fair" flipper. "Heads" is on the obverse, "tails" on the reverse.


**Figure 5.316.** A standard Busty Betty flipper, 25 mm.


**Figure 5.317.** An "unfair" Busty Betty flipper, 25 mm.

The "unfair" flipper, in this case with Betty's hands splayed out at chest level, has different inscriptions. On the obverse is "Heads I win." On the reverse is "Tails you lose." This appears to be somewhat the more popular of the two categories. Both kinds are found with every sort of hair style, facial features and expression, and posture, and in sizes from dime to dollar, though roughly quarter-size is much the most common.

### *Spinners*

Vertical spinners tended to be X-rated. The best known is probably one from the Panama-Pacific Exposition in San Francisco in 1915, which features two bears (not shown). When spun, the bears appear to be attempting to make more bears. A cruder one, both in conception and execution, is the political spinner from sometime around 1950. It appears to be a routine political spinner with an elephant for the Republican Party on one side and a donkey for the Democratic Party on the other.


**Figure 5.318.** Donkey and elephant on flipper, 31.5 mm.

But when spun along the axis indicated by the small holes in the edge at the right and left sides, it produces an image of the donkey having his way with the elephant. While it might be hypothesized that this piece is likelier to be excavated at a site formerly occupied by Democrats than by Republicans, this hypothesis has not been tested.

## Magic and Play Money

### *Magic Tokens*

Magic tokens are used in the performances of magicians, and some varieties have been given out or sold to the audience as well. A common type is the token showing "Maja, Goddess of Magic" in a host of sizes and varieties. This Maja token was produced for magic shop owner August Roterberg (1867–1928) of Chicago, who appears to have originated the type. His initials "A. R." are under Maja's feet. He sold his shop to Arthur and Carl Felsman in 1916, and then he retired to California the


**Figure 5.319.** August Roterberg Maja magic token, 31 mm.

next year. New tokens produced for the shop and mail-order business had the initials "A. P. F." for Arthur P. Felsman. Other versions have other initials, usually traceable to another magician, or no initials.


**Figure 5.320.** Louis Tannen "Magic's Immortals" token, 31 mm.

Another type of magic token shows portraits of famous magicians. The "Magic's Immortals" token shows portraits of Houdini, Kellar, and Thurston on the obverse, and on the reverse are fanned cards. The small letters in the corners of the cards, between aces at the ends, spell "Louis Tannen." Tannen (1909–82) ran a magic shop in New York City starting in 1938. He began selling this token, in several varieties, in the 1950s. There are hundreds of other magic tokens, and they often disappear into the soil, particularly when children attempt tricks with them outside.

## *Play Money*

Play money for children is found in thousands of varieties, and examples imported from several countries have been sold in North American toy stores. The first tiny coins intended as toys for children (long before toys that constituted choking hazards were restricted by law), were used in Germany and exported from Germany to other countries, including the United States and Canada. Nuremberg was the center of the production of such pieces, having long been the German center of production of jetons, gambling tokens, and other early tokens and medals.

The tiny piece, dated 1887, with a crowned 3, a portrait of Queen Victoria, and the inscription "*Nurnberger spielmunze*" (Nuremberg play money) was actually produced not long after 1887 and was intended as a play imitation of a British threepence coin. With imitations of other coins in the same series, and coin series from other countries, it was sold at toy shops in New York and Chicago, and probably at many others with German immigrant proprietors, whether Christians or Jews. While most were simply used for play, some were used in Jewish families as "Chanukah gelt," that is as stakes in seasonal games of chance played with dreidels (small spinning tops inscribed with Hebrew letters).


**Figure 5.321.** German Play money, 13 mm.

Some play money was made in North America before 1917, but when World War I interrupted commercial relations with Germany, and Americans were less willing to buy German goods, home production of play money increased. The Scoville Manufacturing Company of Waterbury, Connecticut made "National Heroes" play money after the war, and a new English slang term for money, "mazuma," was inscribed at the top of each reverse.

The word is adopted from Yiddish and has a Hebrew derivation from an ancient word for keeping things in order, later applied to bookkeeping and thus to money. Some of the "mazuma" was included in packages of Mazuma Chewing Gum around 1930, but it is not clear which came first. The piece with a "5" on the reverse, indicating a play value of five cents, shows national hero Benjamin Franklin.


**Figure 5.322.** "National Heroes" play "mazuma," 19 mm.

While a bust of Abraham Lincoln may be found on many tokens, the inscription on the "lucky play money" makes clear that it was used by children as a toy.


**Figure 5.323.** Abraham Lincoln "lucky play money," 25 mm.

Tex-a-toy play money was dated 1954 or 1956. It was sold in sets including all the standard US denominations of coins and paper money. It is believed to have been imported from Asia, but the country is not inscribed on it.


**Figure 5.324.** Texas-themed play money, 22.5 mm.

By the end of the 1950s plastic play money came into use. The play money of the "Universal-International Bank" was purportedly good for ten cents in silver money, and was "currency of the world." The third year of the world in space was 1960, as Sputnik I was launched in November, 1957. This play money was made in Hong Kong, and imported to toy shops across North America. After trade with the mainland of China was opened in the mid-1970s, play coins and banknotes with "made in China" appeared, and play money from various countries is still sold today. Play coins may be found anywhere children have played during the last century, and most of them can be dated to periods of a few years.


**Figure 5.325.** Universal-International Bank play money, 20.5 mm.

## Encased Coins

Encased coins not used for business advertising were usually sold, though some were given out by tourism boosters. There are not many numismatic souvenirs of Logansport, Indiana, and this encased 1957 cent is one of the few. The standard "Keep me and never go broke" is on the obverse, and the reverse says "Souvenir/Logansport." It says one more thing in tiny letters: "Earl Fankhauser, Fort Wayne." Fankhauser was an encased coin enthusiast who acted as a salesman, drumming up orders from businesses and cities all over Indiana and the Midwest. Like so many other souvenirs of scant value, most of these ended up in the hands of children.


**Figure 5.326.** Fankhauser 1957 encased cent, 32 mm.

## Zodiacal Medals, West and East

Zodiac medals are sold either in sets, or one-by-one, and are normally intended as lucky pieces. Examples intended as advertising were noted earlier. There are at least hundreds of distinct series of these medals, and new ones are still being produced. A token for Libra, originally struck in the 1930s, is an example of an early series. Almost all such tokens exist as sets of twelve.


**Figure 5.327.** Libra medal part of a zodiac set, 25 mm.

### *Asian Calendrical Animal Tokens*

Asian calendrical animal tokens and medals go back a long way, but only those from the last three decades are commonly found in North America. Some are sold in sets and cannot be dated to particular years, but others are produced annually according to the animal that corresponds with each year, and these can sometimes be dated closely. Each year begins with the lunar-solar month that roughly corresponds with February. The twelve-year cycle starts with the Year of the Rat and runs through Ox, Tiger, Rabbit, Dragon, Snake, Horse, Goat, Monkey, Rooster, and Dog, and ends up at Pig. The next cycle begins with the Year of the Rat on January 25, 2020. A goat may also be a sheep, a rat may be a mouse, and so on, and in Vietnam the rabbit is often represented as a cat.

The next highest unit of time is a sixty-year cycle of five twelve-year cycles. Use of the Chinese version of the twelve animals is now popular in many countries, and medals are made outside of China. The animals are also featured on stamps and coins of scores of countries. In North America at this point, most of the medals or tokens bearing calendrical animals are still imported from China and may be found (particularly for a few weeks before Chinese New Year) in shops that sell Chinese goods. As the United States banned imports from China until 1973, the earliest Year of the Rat medals found in the United States date from 1984. This is an example from the Chinese mint, of which many were sent abroad. Now, most of the medals are from private firms, and new series are produced fairly often. Most will be found in the households of immigrants from China and their descendants.


**Figure 5.328.** Chinese mint medal for 1984, 32 mm.

There are many souvenir tokens sold in Chinatowns with Chinese characters, and other medals and tokens of obscure origin with Chinese characters that have been sold in North America. An early example is the round piece with a triangular hole, which features a dragon (a calendrical animal) and the inscriptions of a wen of the Qianlong reign (1736–95).

**Figure 5.329.** Triangle-holed dragon piece, 25 mm.

They are unknown from before about 1900, but have been found in places where they must have been deposited before about 1925. One hoard from around this date was found by a demolition worker inside the wall of a house at San Bernardino Chinatown in California in the 1960s, and when the bag was opened it proved to contain exactly 365 examples. Various stories have been told about these tokens, but none have the slightest hint of evidence to back them up, and most cannot possibly be true. They were struck rather than cast. They were made in North America. They show up frequently, and that is about all that is known.

## The Mardi Gras Doubloon

Mardi Gras doubloons are a phenomenon of 1960 and later. There are earlier Mardi Gras medals and tokens, but they were usually smaller than the doubloons (that are a little larger than a silver dollar), and they are usually known only in small numbers. Beads and other trinkets were the main items thrown from floats to parade watchers in prior years. At the start of the 1960s, aluminum "coins" were included in the material thrown to the crowd, and proved wildly popular. By the end of the 1960s the doubloons and the beads were the basic components of the throws. Each krewe (organization that sponsors a parade or a ball) generally has its own doubloons, with a new design each year. Some are the "silver" color of aluminum, some are of aluminum that has been gold-anodized, and some are anodized aluminum pieces that are green, red, blue, or of many other colors. A few krewes have tried wood or plastic, but recipients seem to feel cheated when they don't get metal doubloons. An example from the Krewe of Poseidon from 1969 has Poseidon himself on the obverse, and a sailing ship from about 1450 on the other side.

Tens of millions of doubloons have been thrown to the crowds at Mardi Gras in New Orleans alone, and there are also doubloons thrown to crowds at Mardi Gras along the Gulf Coast in Mississippi, Alabama, and Florida. Many of those that did not immediately disappear into the soil did so later as children played with them. Aluminum doubloons should be expected to come out of the ground in excavations that include components from after 1960, along the coast from Louisiana to Florida. Most doubloons bear dates, and those that do not may be dated by reference to a number of websites with detailed listings.


**Figure 5.330.** Mardi Gras doubloon, 39 mm.

## Bullion Pieces

Private bullion issues in silver have been minted since the 1960s and are traded in large numbers, as encouraged by the tax rules in several states. In California at this writing, bullion purchases of $1,500.00 or more are exempt from sales tax, while smaller purchases are taxed. All purchases of coins at substantially more than the bullion price are fully taxed. The exemption only applies to purchases at a small premium above the daily spot price of the metal. Of course, if a tax inspector is not actually observing the sale, the rules may be bent a bit. Other states have different rules and different thresholds. Most trading of bullion pieces is done at coin shops. One troy ounce is the standard weight for a "silver bar" or a "silver round." Some private minters indulge their imaginations, using all sorts of designs for "art bars" and "art rounds." While they may bring premiums when first sold, they normally trade at a standard price right along with the ugly ones in the bullion market. An example is the one-ounce round in the "Mythological Legends" series showing a mermaid.


**Figure 5.331.** Silver bullion piece with a mermaid, 39 mm.

Fractional parts of ounces have also been produced, especially one-half and one-tenth ounce pieces. The Golden Eagle Mint used the design of a Chinese panda bullion coin for its silver tenth-ounce piece.


**Figure 5.332.** Golden Eagle Mint tenth-ounce of silver, 17 mm.


**Figure 5.333.** Silver quarter-ounce bullion piece, 25 mm.

Somewhat less usual is a quarter-ounce "Minuteman" bullion piece, dated 1976, that honored the bicentennial of the Declaration of Independence.

Other minters and designers have fantasized about a worldwide currency in precious metal, and pieces of silver, gold, platinum, and other metals have been struck with proposed denominations marked on them. The Universaro was one such proposed denomination, struck in 1974 with a scale and busts of men of five races. The reverse says "one silver universaro" with the eastern and western hemispheres, the notations of weight and fineness, and the phrase "world trade." It contains one troy ounce of silver.


**Figure 5.334.** Silver Universaro of 1974, 38 mm.


**Figure 5.335.** Bicentennial bullion piece, 22.5 mm.

Metric bullion pieces can be found all the way down to one gram, but a common weight is two grams, enough to make a thin coin-like piece with enough area for an interesting design. Originally struck just before 1976 in honor of the Bicentennial of the United States, several versions of this piece have been produced, with at least three different telephone numbers at the bottom. This one has 852-8179, unfortunately with no area code. A bracteate, with only one design (showing in reverse on the other side), it is made of 0.999 pure silver. Gold bullion pieces have also been produced, and are traded in the same shops, but few of them will be found in the ground.

## Religious Charms, Medals, and Tokens

### *Roman Catholic Medals*

Religious medals can be clues not only to the religion of the wearer or owner, but also to national background, gender, occupation, and many other aspects of life. For the first few hundred years of Christianity in North America, almost all religious medals were imported. Spain, Italy, Germany, and France were all major sources. Some medals were later made in Mexico, but most of the religious medals used by Mexican American Catholics over the last 150 years were made in Italy, the premier worldwide source of Catholic medals.

The earliest known religious pendant or pin recovered in what is now the United States is a piece of a silver sixpence of 1602 trimmed to use as an emblem of the cross; it was lost at Jamestown, Virginia, in the early 1600s. Keeping it small was a good idea, as such medals were considered evidence of "recusancy" (Catholic sympathies) among the English at the time, and punishments were severe. It has been suggested by Beverly A. Straube that the date 1602 probably had some significance to the wearer. This is probably so, though we can only speculate on what this significance might be. A child's birth year? Date of a religious conversion? A marriage date? The date a loved one died?

**Figure 5.336.** Religious pendant cut from 1601 sixpence, 9.5 mm. Photograph from Jamestown Rediscovery.

Also found at Jamestown, but in a different context, was a Nuremberg ***jeton*** with a Crucifixion scene on one side and Adam and Eve on the other. It was pierced so that the crucifixion would be displayed right-side-up if the jeton were worn as a religious medal. (An example that was never buried is shown, to make the design clear.) A piece of silver wire was found in the hole—twisted to serve as a link. This, too, would have branded the wearer as a recusant Catholic. It is not surprising that members of a persecuted religious minority would volunteer for a voyage to America.

**Figure 5.337.** Nuremberg jeton served as Catholic medal, 28 mm.

A much later medal imported from Germany has Mary on one side and Saint Anthony of Padua on the other. St. Anthony is much invoked as a help in finding lost objects. Whether he can be effective in finding lost St. Anthony medals is a question for experts in a field other than numismatics (see Figure 5.338).

**Figure 5.338.** Mary and Saint Anthony of Padua, 15.5 mm.

Saint Christopher medals are among the most common, as he is regarded as a protector of travelers, and travel is needed to come to America, as well as to function here. Many St. Christopher medals show ships, and a traditional inscription in Latin is "in tempestate securitas" (safety in the storm). The small one with this inscription is not, though, a St. Christopher medal, but a St. George medal, complete with dragon.


**Figure 5.339.** Saint Christopher medal, 18 mm.


**Figure 5.340.** Saint Christopher medal, 23.5 mm.

Many St. Christopher medals bear the engraved names of their owners, and sometimes of the person presenting the medal to the owner. Some have information that can be helpful in understanding a particular site, and the story of its inhabitants. For example, the silver St Christopher medal with the reverse inscription was carried by John D. Cloyd, a soldier. In addition to his name, the medal bears his military service number. The medal and engraving appear to be from the World War I period.

A St. Christopher medal from the mid-twentieth century shows four forms of transportation: ship, railroad, auto, and airplane. Its inscription is in English. Many non-Catholic Christians have also worn St. Christopher medals.


**Figure 5.341.** Saint Christopher medal, 24 mm.

Later medals may come from less traditional sources. In 1955, after his niece and nephew had been involved in a serious auto accident, Father Gregory Bezy founded the Sacred Heart Auto League, headquartered in Walls, Mississippi. It focuses on auto safety and "prayerful driving."

A cross-shaped medal with the date 1960 shows, on the obverse, Jesus revealing a radiant heart with St. Joseph at the left and St. Christopher at the right. The reverse has a boat, airplane, and automobile, above Mary and the infant Jesus, with the large inscription "Sacred Heart Auto League" and the small inscription "1960 Japan." At that time, Japan was the source for the least expensive small manufactured trinkets, and some sales agent with Japanese connections must have made the arrangements for Father Gregory.


**Figure 5.342.** Sacred Heart Auto League medal, 22.5 mm wide.

These medals were widely distributed around the country, and later issues, intended to be kept in one's automobile, were sent by mail to previous and prospective donors in large numbers. Due to the distribution method, by mass mailings to US addresses at the low nonprofit postal rate, they could be found all over the United States but rarely in Mexico or Canada.

A Jesuit medal showing Ignatius of Loyola is inscribed in Spanish, and looks to have been struck in Mexico. The other side shows the view of the Lady of Guadalupe, describing her not as Patroness of Mexico, but rather as "Patroness of the Mexicans," an important distinction. The medal was not only used in Mexico, but also in the United States (where this example was found), where Mexican Americans constitute a portion of "the Mexicans" even though they do not live in Mexico.

**Figure 5.343.** Jesuit Loyola/Guadalupe medal, 20 mm.

Medals showing popes go back many centuries, but in North America they usually reflect one of two things: pilgrimages to Rome by Americans or visits to North America by popes. Large numbers of German and Austrian Catholics, Italian Catholics, and other Catholics from the mainland of Europe who might have been to Rome, were not present in the United States until just after the 1848–49 European revolutions. As soon as they arrived, some medals showing various popes came with them. Prosperous lay Catholics who could afford a pilgrimage, and priests who visited Rome without being particularly prosperous, became more common in the United States as the nineteenth century drew to a close. They often brought back medals not only for themselves and their families, but for their friends as well, and Catholic religious shops stocked more medals as mass-production by inexpensive methods advanced.

A medal from late nineteenth-century Rome shows Pope Leo XIII, who held office from 1878 to 1903. He succeeded Pope Pius IX, who proclaimed the Immaculate Conception of Mary, and Leo was a devoted Marianist himself, applying the term "Mediatrix" to Mary in 1896. This was an endorsement of the idea that Mary can and does mediate with Jesus Christ to obtain mercy for those who seek it. This medal shows the pope on one side, and on the other has a traditional representation of Mary with Latin words that translate as "O Mary, conceived without sin, speak for us."


**Figure 5.344.** Marianist medal of Pope Leo XIII, 14.5 mm.

A relatively recent example of a medal with religious meaning showing a pope is the pendant from the late 1960s showing Paul VI. On the reverse is St. Peter's Square in "Roma," where such medals are sold in large numbers by shops and by peddlers. This particular example was found at an estate sale around 1999 in California. Handwritten on the envelope containing the medal was this note: "I was told this coin was blessed by the pope his self."


**Figure 5.345.** Roman medal of Pope Paul VI, 31 mm.

A medal from September, 1987, shows another pope, John Paul II, in celebration of his visit to the United States. Note that on the reverse, the sentence "He comes in the name of the Lord" is repeated in Spanish, the language of many Catholic immigrants.


**Figure 5.346.** Medal for Pope John Paul II's US visit, 32.5 mm.

Pilgrimages to the Holy Land are also undertaken by all kinds of Christians, as well as by Jews, Muslims, and some other smaller groups. Christians who return from their pilgrimages with medals may have some from Nazareth. The small one with Mary, Jesus, and Joseph on the obverse has five crosses on the reverse, of which the center is inscribed "Nazareth."


**Figure 5.347.** Christian pilgrim's medal from Nazareth, 13.5 mm.

## *Non-Catholic Christian Religious Medals*

Non-Catholic Christian religious medals and charms cover a wide range of types and styles. Some are simple crosses, and some are much less simple crosses. The ornate Celtic cross pendant is carefully labeled to prevent confusion: "Presbyterian," it says on the reverse.


**Figure 5.348.** Presbyterian Celtic cross pendant, 22 mm wide.

Washington Cathedral, as shown on the octagonal donation token from the early 1900s, developed over the years into Washington National Cathedral, the center of Episcopalian worship in the national capital. The finished building differs in several respects from the planned building on the token, and over the years the mission of the Cathedral expanded well beyond Washington to include national aspects. Medals and tokens have been issued to raise funds for the building for more than a century, and they have been popular tourist souvenirs, entering every part of the United States and no doubt entering the soil everywhere.


**Figure 5.349.** Donation token, 31 mm.

During World War I, many churches provided tags that could go with a soldier's dog tag, or simply be worn around his neck, indicating what denomination of clergy would be needed should he become a casualty. The Army and Navy Commission of the Lutheran Church, Missouri Synod, minted a token with a cross in the obverse background, largely obscured by an eagle perching on the United States and Lutheran Church shields, with the words "Loyalty to Christ and country." On the reverse, it says "In case of need notify Lutheran chaplain."


**Figure 5.350.** Lutheran soldier's tag, 30 mm.

The Salvation Army celebrated its 75th Anniversary in 1955. The commemorative medal was distributed with a short chain, as part of a keychain. Their slogan, emphasized during the anniversary celebration, was "Heart to God and hand to man."


**Figure 5.351.** Salvation Army anniversary medal, 32 mm.

Some of the most popular Christian medals, in every size, are those featuring the Lord's Prayer. For some time in the 1870s and 1880s there was a friendly competition among minters to produce the most microscopic version of this prayer. The small medal with the Liberty Bell on one side and the Lord's Prayer on the other was minted in Philadelphia in the 1870s around the time of the 1876 Centennial Exposition.

**Figure 5.352.** Tiny Philadelphia Lord's Prayer medal, 12 mm.


**Figure 5.353.** Larger medal with Lord's Prayer, 25 mm.

A larger version from around the same time has print almost big enough to read. It also features the Liberty Bell, which of course has upon it a Biblical quotation from Leviticus 25:10 "Proclaim Liberty throughout all the land unto all the inhabitants thereof."

## *Jewish Donation Receipt Medals*

Jewish donation receipt medals are issued by religious and charitable organizations. Many are intended as lucky pieces, as well as receipts. The basic Jewish religious organization is the congregation, not responsible to any higher rung on an organizational ladder. A congregation may join or withdraw from regional or national organizations, and makes its own decisions about its employees, including rabbis. A synagogue is a building used by a congregation for meetings, prayer, and study. Most Jewish medals are inscribed in Hebrew or Yiddish, both written in the Hebrew alphabet, though many also have inscriptions in English or other languages. A researcher who cannot read Hebrew should consult someone with a Jewish education to read the inscriptions. Most rabbis are willing to be helpful to archaeologists and will be happy to read inscriptions or recommend someone to read them.

The gilded medal with the building on the obverse, and a scroll with commandments on the reverse under a Star of David, was issued to contributors who financed the construction of the Ahavat Shalom synagogue in the Bronx in 1928. Hebrew is written from right to left, and the two words at the right in the bottom line under the building are "Ahavat Shalom," meaning "love of peace." The last (left) "word" in that line is not really a word, but a date. As in ancient Greek and Latin, numbers in traditional Hebrew notation are written with letters. The date is [5]688, a Jewish year that began at sunset on the evening of September 26, 1927, and ended at sunset on the evening of September 14, 1928. All Jewish days begin and end at sunset.

**Figure 5.354.** Donation receipt for Ahavat Shalom, 32.5 mm.

Another donation receipt medal with a mostly English inscription is from the Hebrew Sheltering Home for the Aged in Los Angeles; it's from 1936. It was intended to mark the

Silver Jubilee of the home. Next to a portrait of an old man, the obverse shows the Hebrew words of the commandment "Honor thy father and thy mother." It appears that some of the early records had already been lost, and the estimated foundation date of 1912 was wrong.


**Figure 5.355.** Donation receipt medal shelter home, 30 mm.

Actually, the organization was founded in 1908 as the Hebrew Sheltering Society, and incorporated under that name in 1910 while providing aid to needy immigrants. A large family home was purchased in 1914 or 1916 in Boyle Heights on the east side of the city, then the main Jewish neighborhood. There was growth, and at its maximum the home sheltered some 350 people. Needs changed with the implementation of Social Security, and three decades later Medicare, and in 1972 the home moved northwest to Reseda. A later merger with a similar organization that also had a building in Reseda resulted in the present-day Los Angeles Jewish Home, a senior care facility with a special Alzheimer's unit.

Anniversaries of synagogues and other Jewish organizations have been commemorated on medals. The 1999 medal from Temple Beth El in Riverside, California, marks the 55th anniversary of its founding in 1944 as the Jewish Community Center; the 50th anniversary of congregational affiliation with the Union of American Hebrew Congregations; and the 35th anniversary of the construction of the congregation's present building. The reverse of the medal shows the bima, the stage at the end of the sanctuary with the Holy Ark on the wall holding the congregation's Torah scrolls.


**Figure 5.356.** Riverside Temple Beth El Medal, 38.5 mm.

These medals are not likely to be found in the soil yet, as they were sold for eighteen dollars, a traditional "lucky" amount for a donation. Eighteen is written in Hebrew with the same letters that spell "chai," meaning "life." Most families keep their examples of the medal in a safe place, but in later years some will no doubt find their way into the archaeological record.

Like Christians and others who visit the Holy Land, Jews also bring back medals, tokens, and pendants. Most of the Jewish souvenirs are inscribed in Hebrew and feature traditional Jewish symbols. The six-pointed Star of David is not a religious symbol, but it symbolizes the Jewish people. It has been called the Shield of David and the Seal of Solomon as well (Solomon was the son of David).


**Figure 5.357.** Souvenir pendent with Star of David, 25.5 mm.

While there is little surviving literary evidence that the six-pointed star was a Jewish symbol more than a few centuries ago, the symbol is associated archaeologically with Jewish artifacts and settlements in the Holy Land going back more than two thousand years. The Hebrew words in the center of the star say "Tower of David," and that is the common name of the building in Jerusalem shown next to the inscription. The building as it stands today has nothing to do with David except in recent stories, as it was built in 1537, some 2,500 years after David died. It is part of the early Ottoman-period wall complex. While an American Jew might consider this pendant to have religious significance, an Israeli Jew probably would not but would consider it a local tourist souvenir instead. There are, of course, many Jewish religious medals as well, featuring Torah scrolls, prayers, menorahs, and rabbinic blessings.

**Figure 5.358.** Star of David pendent with Tablets, 26 mm.

A somewhat ambiguous Jewish-related pendant shows a Star of David behind two Tablets of the Law with ten numbers representing commandments. But the numbers are not in Hebrew; rather they are in Roman numerals. On the back, in tiny print, is the inscription "Whitehead-Hoag." Medal producer Whitehead-Hoag of Newark, New Jersey, whose owners were not Jewish, probably struck this as a speculation, figuring that someone would buy it. Someone did buy this one and gave the hole some wear. Whether the wearer was a Jew attracted by the six-pointed star and the tablets, or a Christian who honored the Jewish origins of Christianity and wanted a reminder of the Ten Commandments, can never be known.

## *Recuerdo Matrimonial*

"Recuerdo matrimonial" is the inscription on a particularly Mexican artifact used in weddings. Many years ago, actual gold coins were used in prosperous families for a ceremony, part of a traditional wedding, in which the husband gives coins to his wife as a sign that he is willing to support her and cherish her. In less prosperous families, silver coins were used, sometimes gold plated. Gold-plated coins are found in Mexico that have been used for this ceremony. By the middle of the twentieth century, tokens were often used, usually gold plated, and inscribed "recuerdo matrimonial" (marriage memento or marriage token). Tiny imitations of some older gold coins were used for a period in the 1960s and later in some areas. Some silver medals were minted, but rising silver and gold prices, and the spreading of this custom into every economic niche in society, resulted in the creation of large numbers of base-metal pseudo coins that no longer look much like any real coin at all. There are hundreds of varieties, of which two tokens are shown here, each showing a Mexican eagle on the obverse.

**Figure 5.359.** Recuerdo Matrimonial, 18.5 mm.

The example with a large expanse of paving stones on the reverse appears to show the Mexico City Cathedral and the adjoining Zocalo, the big central square. The Zocalo is an important national symbol, and a focus of national celebrations. Other churches have been suggested as the model for these tokens, and indeed many of them seem to show somewhat different façades of churches.

**Figure 5.360.** Recuerdo Matrimonial with two hearts, 19 mm.

The other example has two hearts on the reverse. The two hearts, we may hope, beat as one now that the man and wife have been joined in marriage. There are many other designs, including versions featuring Pope John Paul II, an enrobed priest, and even the late and not generally lamented Emperor Maximilian. The recuerdo matrimonial has become quite common in the United States and has spread from use only in Mexican families to use by Filipino American families, Central American families, and even some families who are merely members of congregations with many Mexican members, and have thus attended weddings where the marriage tokens have been used. The custom has spread enough recently that wedding supply wholesalers now offer groups of wedding tokens in English.

Traditionally, in most families the marriage tokens are presented only to the wife, in others additional individual tokens are presented to guests, or certain family members and guests. More recently, in some cases the husband presents them to the wife, and the wife gives him some as well. Times have changed. In fact, times have changed so much in California, and probably in some other states as well, that even though priests do not preside at same-sex weddings, some such ceremonies have also featured marriage tokens.

When the tokens are presented, they are normally in a group and often in a little chest. Such a chest is shown here with its contents. This chest is 30 mm wide, 25 high, and 25 front-to-back. It can hold about twenty marriage tokens, but traditionally thirteen coins are in the chest. The chest and coins together are often called an *arras*.

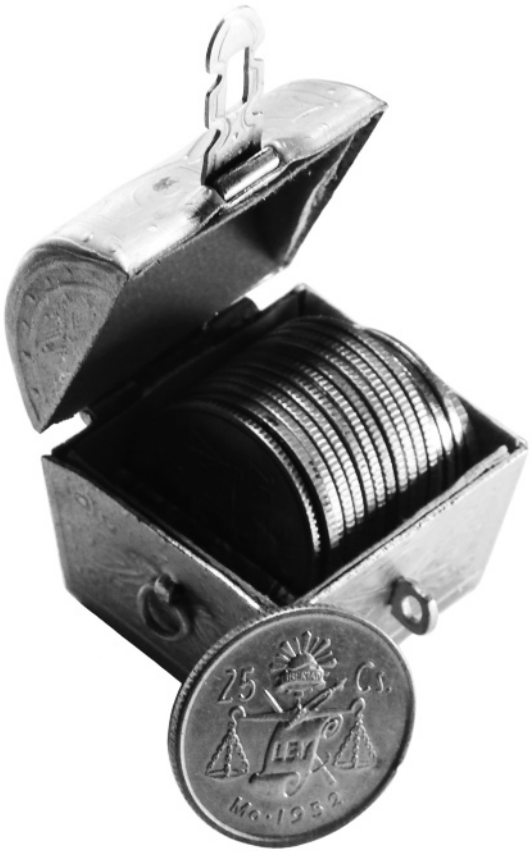


**Figure 5.361.** Arras, a tiny chest with wedding tokens, 300 mm wide.

Iranians also often use tokens at weddings, though differently than Mexicans. The tokens, with a Farsi good-luck message, are gently tossed at the couple, or thrown under their feet as they walk from the wedding, or distributed around the room by children. This custom is now current in many Iranian American families. Several designs of tokens have been noted, usually with pairs of things—people, birds, or plants, often flanking a mirror. The token with the standing looking glass in the center is from about 1980 and was probably imported from Iran.

**Figure 5.362.** Persian wedding token, 15.5 mm.

### *Novruz Tokens*

Novruz tokens, small imitation coins with Farsi-language inscriptions are given to children as part of the celebration of Persian New Year in the spring. In the United States, Novruz is mainly celebrated in homes rather than out in public like Chinese New Year, so Iranian Novruz practices are not widely known. But some of these practices leave evidence in the archaeological record and will be recovered when neighborhoods with Iranian immigrant residents are investigated by archaeologists. Persian society is complex, as should be expected of one of the world's most ancient civilizations, and the celebration of Novruz has many nuances and varieties. Somewhat different practices are observed in families that have a strict and orthodox interpretation of Shia Islam, families that are Islamic but include ancient pre-Islamic rituals in their celebrations, and families that are not Islamic at all, but are Iranian Jews or Iranian Christians. All celebrate Novruz, just as almost all Americans celebrate New Year's Eve on December 31, though some also celebrate Jewish New Year, Chinese New Year, or Persian New Year.

In Iranian practice, before the silver was removed from small Iranian coins in 1952, coins were given to children at Novruz. In rich families gold might be used. In other families silver was likelier. After 1952 small silver tokens were specially struck with Novruz-related inscriptions to substitute for the coins. Over the years, particularly as the price of silver climbed in the 1960s, more and more of the tokens were silver plated or had a light silver wash. Some were gold colored.

While some Iranians came to the United States before 1979, sometimes for economic reasons and sometimes to seek refuge from political oppression, very large numbers came after the 1979 Islamic Revolution, including many monarchists and others associated with the overthrown government of the Shah. Shortly after 1979, religious minorities began immigrating to the United States in large numbers, including many Christian and Bahá'í families, and a large number of Jews, most settling in Southern California. It was probably during the mid-1980s that the first Novruz tokens were struck outside Iran, after the importation of goods from Iran was outlawed. The tokens appear to have been produced in the United States, China, India, and elsewhere. This earlier Novruz token was used in the 1960s.

**Figure 5.363.** Novruz token for Persian New Year, 17 mm.

## Award Medals

### *School Award Medals*

School award medals are presented to students who have distinguished themselves in some way. In some cases, that merely means that they graduated, but medals are usually reserved for those who win awards. Some medals are presented by the school and some by outside organizations. The sterling silver award medal to Helen Baker of Thurston County rewarded her performance as an eighth grader in "Declamatory," that is, in delivering a speech. It was awarded in May of 1929. Thurston County is probably the one in Washington State that includes the state capital of Olympia, as the one in Nebraska has a very small population. Finding a token with a common name, such as Helen Baker, would only be helpful to an archaeologist if individuals with that surname were known to have occupied the site.


**Figure 5.364.** Silver award medal, 1929, 31.5 mm.

### *Athletic Contest Medals*

Athletic contest medals have a very long history, being almost as old as coins, but their award in large numbers only seems to go back to about 1900. Factories that produced medals were eager to get the business, and salespeople actively sought new markets, including school and organizational athletic contests. When New York newspapers began sponsoring mass athletic events for children, and later for adults, a large number of medals were required.

In 1909 the Sunday World extended its school-based baseball series into the summer, and over two thousand high school boys were involved. The medal showing the Statue of Liberty and two hemispheres of the globe was awarded to one of the players in the "vacation games." The maker was Dieges & Clusy, founded in New York in 1898, that moved to Providence, Rhode Island in 1934. They produced medals for the Olympics and many other important athletic events.


**Figure 5.365.** New York Sunday World games m, 30 mm.

Apparently the lower portion of a gold medal awarded in 1916, the half-dollar-size piece was used at the Bradley Interscholastic Athletic Meet in Peoria, Illinois. Bronze plated with

gold, the medal was probably made in Chicago. It bears no maker's name, but the name may have been on the missing upper bar.


**Figure 5.366.** Medal for 1916 interschool meet, 30 mm.


**Figure 5.367.** High School wrestling silver medal, 15 mm wide.

A much later silver medal for high school wrestling, for the 1966–67 school year, was made by Jostens. The Jostens firm supplied not only medals, but a host of other products needed by high school boosters nationwide, including most notably yearbooks. On the reverse of the medal are the small words "Jostens sterling," indicating that the medal is 0.925 silver.

## *Agricultural Fair Medals*

Agricultural fair medals are found throughout the United States and Canada. It is not unusual for a county fair to award hundreds of medals in all sorts of categories. There are many counties, and the fairs are annual, so hundreds of thousands of such medals have been awarded. The dollar-size sterling silver medal awarded by the Southern California Farm Bureau in the 1923–24 Egg Laying Contest went to a hen named "Red Pen," owned by Fred Heying.


**Figure 5.368.** Medal awarded to "Red Pen," 1924, 38 mm.

Many such medals are treasured family heirlooms, but as agriculture involves a far smaller percentage of the population than formerly, and memories of the farm dim, more of the medals are disregarded and may become playthings for children or "junk" in the detritus left by someone who passes on.

## *Pet Show Medals*

Pet show medals are awarded to the humans who show dogs, cats, and sometimes other animal companions of human families. The large dog show medal was never awarded, and thus never inscribed, but it was intended for award by the Kennel Club of Riverside. The cross of Lorraine surmounting the framework of a bell is the emblem of the City of Riverside, California. Locally, the cross of Lorraine is called the "Raincross," based on a fictitious account of an "old Indian sign" used in a real estate promotion around 1903 pushed by master promoter Frank Miller, builder of the Mission Inn. Miller used the symbol on public works he subsidized, it was adopted as an official city symbol, and the image may be found everywhere in Riverside.


**Figure 5.369.** Show medal of Riverside Kennel Club, 51 mm.

## *Safety Award Medals*

Safety award medals include the numbered medal, "registered in Chicago" with the National Safety Council, which was awarded to a truck driver who completed four years without an accident. These medals, apparently from the 1930s through the 1950s, are known in several types and had various different numbers of years stamped into them. Some individual employers also awarded safety medals to workers who avoided accidents. Most are not inscribed with names due to the cost involved, but a few are inscribed.


**Figure 5.370.** Safety Award medal, 30 mm.

## *Recovery Medals*

First Alcoholics Anonymous (AA) and then various other twelve-step programs adopted pocket pieces to commemorate one day, one month, or one year of sobriety, or whatever form of recovery is appropriate to the organization. Some of them are produced and sold by private firms. Some are distributed by organizations, and some are minted to the order of institutions that provide care and counseling. The token system is believed to have originated in Indianapolis, Indiana, in 1942,

about two years after the local meetings began there. It has developed along with other features of twelve-step programs, and at this point normally features tokens or "chips" of different colors (struck in anodized aluminum) to mark different periods of time. The basic one is twenty-four hours, or one day. Most tokens for a year or more are of brass as are some varieties of tokens for shorter times. Many AA participants who carry a token marking one year or more in recovery also carry a twenty-four-hour token, as a reminder that sobriety must be achieved one day at a time. The brass three-month token is another common type, bearing the initials AA for Alcoholics Anonymous in the center of the reverse.


**Figure 5.371.** AA brass recovery token, 33 mm.


**Figure 5.372.** Betty Ford Center recovery "chip," 33.5 mm.

Many tokens or "chips" have been produced for treatment facilities, for use in their programs. The piece from the well-known Betty Ford Center in Rancho Mirage, California, features the "serenity prayer" used in many programs. The prayer has been attributed to Reinhold Niebuhr and dated to 1943, but recent research has pushed the date back to 1936 or earlier, and its authorship is uncertain.

Specific tokens have been used to connect with particular age groups, genders, nationalities, and other particular classifications of people needing help in resisting addictions. The recent token inscribed "In the spirit of love" with a dream catcher on the obverse is struck for Native Americans. The prayer on the reverse appears to have been influenced by at least three distinct Native American traditions.


**Figure 5.373.** Native American recovery token, 33.5 mm.

## Wooden Tokens

Wooden tokens do not stay in good shape once buried, and when earlier ones are encountered in an excavation they may very well be too rotted to recover and go through a screen in pieces. Sometimes the ink is gone, while the wood remains. However, in particularly dry areas, some may be found in readable condition. The first known wooden tokens are quite old but quite rare because wood succumbs to rot, fire, and insects. Wooden tlacos were included in the mix of coins and tokens in circulation in Mexico City four centuries ago. Modern wooden substitutes for money in the United States date back to the early 1930s when Tenino Washington used small rectangular sheets of wood to print an emergency scrip. Later in the 1930s, the first wooden nickels were made, and they became a popular novelty item used for advertising, discounting, propaganda for ideas and causes, and souvenirs. Most of the uses are already reviewed for tokens in general. They have usually been the cheapest possible kind of token, and when there is no need for permanence, the wooden nickel (of whatever denomination) has been the choice of the thrifty. As the wooden nickel started while the Buffalo nickel, with the "Indian Head" obverse, made up most of the five-cent pieces in circulation, the "Indian head" is a common obverse for wooden nickels as well. Thurmans's Service (station) in Legrande, California used this five-cent token to stimulate business during the 1950s. These really were used, and were touched frequently by men who had been working on automobiles, which explains the somewhat oily color of the piece.


**Figure 5.374.** California wooden nickel, 1950s, 38 mm.

Sambo's Restaurant was founded in 1957 by Sam Battistone and Newell "Bo" Bohnett, who started a restaurant in Santa Barbara, California, that was initially called "Sam and Bo's" but quickly became "Sambo's." In 1958, Sam Battistone was introduced to the book *Little Black Sambo* about a boy in India and his struggle with a tiger (who was eventually turned into butter). The owners decided to redecorate the restaurant using the book and its illustrations as their theme. In very short order, the business became a chain of franchises, and it grew to more than 1,600 stores by 1977.

Meanwhile, the chain came under attack for its association with a racist book. The book was racist; it directed its condescension toward a boy from India. But in the United States, a little "Black" boy with any name at all was assumed to be of African ancestry. So during the 1960s and 1970s, as the chain used more wooden nickels than any other firm in promotions and discounting, it was under attack in the press. However, this is not why the chain disappeared. The expansion was fueled by a sort of Ponzi scheme in which franchise fees paid for national

advertising, and the franchisees usually lacked the capital to run a restaurant if anything at all went wrong. Then the Securities and Exchange Commission took an interest. From 1,450 restaurants in 1982, Sambo's went down to one lone restaurant by 1989. The chain left behind a huge number of artifacts, including wooden tokens good for one cup of coffee. An example from Los Angeles County, California, came from the Sambo's in the City of Industry, but could be used anywhere in the chain. In recording any Sambo's token, be sure to include the name of the issuing restaurant.


**Figure 5.375.** Sambo's coffee token, 38 mm.

A new type of artifact, the "round tuit," was created during the 1980s. A salesman, told once again that the purchasing agent would submit his order when he could get "around to it," would hand the purchasing agent a small round metal, plastic, or wooden token inscribed "tuit." The salesman would then say "OK, you've got a round tuit, can I get my order now?" Over a period of a few months, round tuits became ubiquitous, and they were produced in many forms and presented to all sorts of procrastinators and to the honestly busy without distinction. They may still be ordered from producers of wooden nickels, as well as of metal and plastic tokens. The wooden round tuit from Southern California for Sladky Software Services appears, by its phone number, to have been produced before 1992.


**Figure 5.376.** A "round tuit" from a software company, 37 mm.

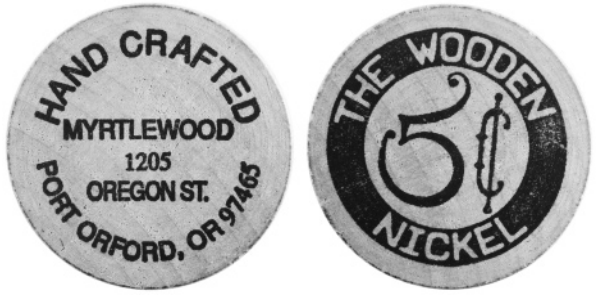


**Figure 5.377.** Oregon wooden nickel, 38 mm.

A wooden nickel that was in use in Port Orford, Oregon, during 1997 advertised and was good for five cents at "The Wooden Nickel," a shop selling hand-crafted myrtlewood objects. The token itself is not made from just any wood, but from Oregon myrtlewood.

There is no reference listing every wooden token, but most can be found online, and many of them carry enough information to be fully identifiable.

## Plastic Tokens

Tokens of hard rubber were used here and there as early as the 1860s but are rarely found in North America. Plastic tokens were first used in the early twentieth century, but they did not become common until World War II when the usual token and coin medals became unavailable. After the war when certain tough plastics became readily available, plastic tokens became common, as they could be produced more cheaply than metal tokens. Some of the earlier postwar tokens were made of white plastic, with the designs both impressed and painted black, red, or some other color. A bar token from Vince's Spa in Racine, Wisconsin is in black on white and has an octagonal shape to command attention. Vince appears to have run a restaurant and bar with music and singing, but no actual spa features are mentioned in newspaper articles.


**Figure 5.378.** Plastic bar token from Racine, Wisconsin, 22.5 mm.


**Figure 5.379.** Oshkosh token, 23 mm.

Another of the numerous Wisconsin plastic tokens is this one with white letters on black, good for ten cents on drinks at the National Bar in Oshkosh, Wisconsin. Researching the National Bar on the Internet is complicated by millions of references to an association of lawyers, but during the 1950s and 1960s any lawyer in Oshkosh could gain admission to the National Bar for just the price of a drink (or ten cents less with a token). For some reason, probably an enthusiastic salesman who visited many, many bars, Wisconsin led the way in the use of plastic tokens.

Popular opinion seems to have been that tokens made of coin metals were more impressive, attractive, and legitimate-looking than plastic tokens. But when tokens for use in jails and prisons are produced, for reasons of cost and security rather than disregard for aesthetics, many prison tokens have been made from plastic. Security concerns inspired the production of plastic tokens for use in North Carolina prisons as early as the 1930s. They were taken out of use around 1970. Each token in the set, including this light yellow one-dollar piece, was made of colored plastic in sizes similar to US coins.


**Figure 5.380.** Security inspired plastic dollar, 36 mm.

A translucent, relatively fragile plastic has been used for some tokens, including the bus token from Kelly Air Force Base at San Antonio, Texas. These bus tokens, in several colors with various numbers on them, were taken out of use in 1955.


**Figure 5.381.** San Antonio, Texas, bus token, 31 mm.

Since the 1960s plastic tokens have become very common, and in the 1990s vividly colored plastics were introduced into token production; this made the old color classifications obsolete. Many of the preceding classifications of tokens and medals have been produced in plastic.

## Canadian Tokens

Practically any low-value coin was accepted in circulation in the British colonies in Canada before the War of 1812. British copper coins were preferred and British silver was always welcome (along with the American standard, the silver and gold coins of the Spanish colonies). However, gold, silver, and to a lesser extent good heavy British copper coins tended to depart on the next ship, leaving the dregs in circulation. When the British conquered the French Canadian colonies in 1710 and 1758–59, most of the French money left with exiles or (in the case of silver) was exported, mainly to France. The result was a population desperate for small change and willing to accept almost anything, including blatantly obvious counterfeits. Two examples of purported British halfpence appear to be very worn, and they are, but appearances can be deceiving.

**Figure 5.382.** Counterfeit "1727" Canadian halfpenny, 28 mm.

The George I halfpenny bears a slightly blundered date of 1727 but was likely made some years later. If a counterfeiter reproduced a worn coin and gave it the appearance of age (burial for a period in manure was a favorite technique), he could claim to be as surprised as anyone else when it turned out not to be genuine. While this counterfeit was in American circulation for many years, it was made with a much worn appearance, and the head never looked much better that it does now. Britannia on the reverse has a little more detail, enough to be sure that she was never issued by a government mint.

The 1776 piece of George III has a little more detail, but was probably made years after 1776 by copying a worn example. It was probably of American manufacture, and probably made not long before the tokens specifically designed for Canadian use were made at the end of the Napoleonic Wars. Neither of these is a token, so inclusion in this section may be questionable, but they certainly were not genuine coins either!


**Figure 5.383.** Halfpenny of "1776," 27.5 mm.

To join worn and counterfeit coins and tokens from Britain and the United States, tokens were struck by speculators and released into circulation in Canada. Many were anonymous, as this was safer when the legality of unauthorized tokens was questioned. One of the earliest tokens clearly intended for Canadian use after the War of 1812 paid homage to a British hero of that war, Isaac Brock.


**Figure 5.384.** Private 1816 halfpenny for Isaac Brock, 26 mm.

Having purchased higher and higher military ranks, as was corruptly routine under George III, he had become the highest-ranking officer in Upper Canada (Ontario) by 1812. His troops and allied First Nations troops won a battle for Detroit; though the British lost a later battle for Detroit, and it ended up in the hands of the United States. Major General Brock was killed in

the battle for Queenston Heights in the Niagara area in October, 1812, and he was proclaimed as "the hero of Upper Canada." With a memorial urn on the obverse, and the minting date 1816 on the reverse, the token bears the slogan "Success to commerce & peace to the world," a common sentiment after the long Napoleonic Wars.

The tokens inscribed "trade and navigation" over a ship, and "halfpenny token" around a woman playing a harp, are dated 1820, though this one has a date so poorly engraved that it is sometimes called the "1320" variety. Despite the date, it was produced and imported up into the 1830s and is quite underweight. Actually, many of the tokens with earlier dates were struck later, using the earlier dates to evade penalties for striking underweight tokens after particular laws and regulations were enacted.


**Figure 5.385.** "Trade and Navigation" halfpenny, 26.5 mm.

Another slogan, attributed to Napoleon, was used on tokens issued during and after the Napoleonic Wars. When Napoleon was asked what British advantages might be in their war against him, he reportedly said "ships, colonies, and commerce." The token with a ship on the obverse and "ships, colonies, and commerce" on the reverse is from the 1830–35 period.


**Figure 5.386.** Postwar halfpenny token, 26 mm.

Merchants' tokens bearing firm names were issued by some of the better-capitalized establishments in Canada, including Lesslie & Sons of York, Kingston, and Dundas (York later became Toronto). They issued a huge twopence token in 1822 and two halfpence tokens in 1824 and 1828. This is the 1824 halfpence, with irregular ground under the feet of Justice.


**Figure 5.387.** Leslie and Sons halfpenny of 1824, 26.5 mm.

Upper Canada was the name for what we now know as the southern portion of the Province of Ontario. A "commercial change" token denominated as a halfpenny, though quite thin, was dated 1820. It shows an anvil and two crossed shovels on one side and a sailboat on the other. Varieties were issued over some years. Like most of the underweight tokens, it was anonymous.


**Figure 5.388.** Anvil and shovels halfpenny, 27 mm.

Specific tokens for different colonies were issued, though they normally circulated in more than one colony during the long coin shortage. A one-penny token for Nova Scotia was dated 1832. On this example, the thistle on the reverse appears quite worn, and it is, but it was not struck up clearly originally. To avoid the cost of a new obverse die, the left-facing royal portrait that had served for George IV, who died in 1830, was used again for William IV, though there is no name or title on the token. The royal portrait of George IV faced left, while the royal portrait of William IV faced right, in the long-customary alternation of royal portrait directions. While not approved by the British government, the series of thistle tokens was ordered from the private Birmingham mint by the Nova Scotia local government itself.


**Figure 5.389.** Nova Scotia thistle penny of 1832, 33 mm.

The local slogan of "self-government and free trade" appeared on the token of Prince Edward Island dated 1855. Note the older spelling, "Prince Edward's Island." This anonymous token is attributed to George Davies, a member of Charlottetown's newly established city council in 1855. Though without a denomination, it was intended to serve as a halfpenny or cent.


**Figure 5.390.** P.E.I. halfpenny token, 25 mm.

The government in Upper Canada (Ontario) and Lower Canada (Quebec) cracked down on underweight tokens in 1835, and while this may have forced some tokens across borders into maritime provinces or into the United States (then in the grip of the Hard Times), it didn't force them out of circulation entirely. However, it was enforced well enough in the southern portions of Upper and Lower Canada that it caused a renewed coin shortage, and the government officially permitted some banks to issue tokens of standard weights and sizes. The four banks, all based in Montreal, were the Bank of Montreal, the Quebec Bank, the City Bank, and La Banque du Peuple.

An example of these tokens from the City Bank shows a "habitant," a French-speaking resident of the rural areas, dressed in winter clothing. The idea (with no factual basis) surfaced that this man resembled Louis-Joseph Papineau, leader of the French in Canada until he was forced into exile when the Rebellion of 1837 began; they have been nicknamed "Papineaus" ever since. This halfpenny denomination was called *sou* in French, and to the left and right of the man's feet it says "un sou." All the 1837 bank tokens had a common reverse featuring the Arms of Montreal with the bank name on the ribbon.


**Figure 5.391.** City Bank "habitant" token, 1837, 28 mm.

After suppression of the 1837 rebellion, Upper Canada and Lower Canada were made one Province of Canada in 1840. The government decided that only the banks that held official government deposits and accounts could issue tokens, and the Bank of Montreal was the favored bank chosen. An 1844 official bank token from the Bank of Montreal shows a front view of the bank, and has the Montreal arms on the reverse. There is not a word of French anywhere on the token. Despite losing the token concession in 1850, during a severe local coin shortage in 1852 the Bank of Montreal was permitted to strike one last issue of tokens.


**Figure 5.392.** Bank of Montreal token of 1844, 28 mm.

An 1849 Rebellion Losses Bill in Lower Canada (Quebec) paid compensation to some French Canadians and others who suffered damages in the 1837 rebellion. The bill sparked rioting by English-speaking crowds in Montreal, and the government buildings were destroyed. The seat of government was moved to English-speaking Toronto, and the right of token issuance was taken away from the Bank of Montreal. Instead, the new tokens came from the Bank of Upper Canada, which retained its name after the provincial merger. Knowing full well that the Pistrucci design of the dragon being vanquished by St. George, first used on the British sovereign in 1817, celebrated the crushing of France by Britain, the Bank of Upper Canada adopted this design for its new tokens as a way to taunt French Canadians and assert British supremacy. These tokens, struck in Birmingham, England, were issued from 1850 through 1857.


**Figure 5.393.** Bank of Upper Canada token, 33 mm.

New coins simply inscribed "Canada" with denominations and royal portrait and titles were issued in 1858 and 1859. Despite the supply of "Canada" coins, monetary circulation was chaotic in Canada during and after the Civil War in the United States, and money from south of the border circulated in massive amounts along with various tokens. It was not until the early 1870s, after Confederation, that Canada would have a reliable supply of government-issued coins.

During the monetarily chaotic 1860s, many tokens, coins, and counterfeits of both were counterstamped with the initials or names of Canadian merchants. These counterstamped pieces had several purposes. They served as advertisements for the merchants whose names appeared on them. They could have their acceptance in trade enhanced, at some times and in some places, because they were presumably good for merchandise at the stores whose countermarks they bore. In some cases, the act of counterstamping a name on tokens and coins served to boost the ego of the counterstamper. Similarly mixed motives inspired many merchants in the United States who counterstamped coins and tokens. Certainly the most prolific of the counterstampers in Canada (and indeed in North America) was the Montreal firm of Devins and Bolton, chemists and druggists, who made up some of their own preparations and sold many made by others. Their counterstamping efforts began in 1863, and the latest coin with their counterstamp is dated 1865, though the firm did not dissolve until 1880. The year 1870 is often cited as the likely end of the counterstamping. For several years they counterstamped practically every older copper coin that came across their counter. Though much of the underlying design is not visible, the example shown is counterstamped on a "Hibernia" halfpenny, common in North American circulation from the 1730s through the mid-1800s.


**Figure 5.394.** Counterstamped Hibernia halfpenny, 28 mm.

### *Postconfederations Canadian Tokens*

Postconfederation Canadian tokens are generally similar to tokens of the United States during the same period, and no attempt is made to cover them in detail. Some are mentioned and shown in the material on different kinds of tokens. But some tokens connect to specific trends and events in Canadian history, and many of them can be made to tell stories specific to their country. The worn Canadian token is closely tied to the development of labor unions, and while produced in the early teens, was in use during the Winnipeg General Strike of 1924.

The Workingmens Union Bakery was founded as a cooperative in 1913, part of a cooperative movement closely tied to labor organizations. During the 1924 General Strike some labor-based cooperatives continued to work, especially those producing and distributing foodstuffs. Bread was often delivered in those days, and this token was used in a manner similar to dairy tokens.


**Figure 5.395.** Workingmens Union Bakery token, 24.5 mm

Leaders of the anti-union employers in Winnipeg, who demanded troops from the national government to put down the strike, claimed that only "Bolsheviks" could get bread. According to their written complaints, deliverymen demanded to see a union membership card before leaving the loaves of bread. By 1942 the bakery was no longer a cooperative and changed its name to City Bakery in that year.

Drumbo is a very small crossroads settlement in southern Ontario, roughly between Buffalo, New York, and Detroit, Michigan. W. Stewart Murray bought the dry goods and grocery store in the Blenheim House in 1922 and promptly ordered tokens, including this one. Murray sold the store in 1949, and it ceased operations some twenty years later.


**Figure 5.396.** Murray store token, 21.5 mm.

Very similar to tokens used in neighboring US states around the same time, these tokens circulated to some degree outside the store among the local farmers, and some could be expected to be found in strata exposed between 1922 and the end of the 1940s. There were many such stores using many similar tokens throughout southern Ontario during the first half of the twentieth century.

One thing that definitely distinguishes the mix of tokens and medals found in Canada from that found in the United States is that far more pieces with royal connections will be found in Canada. Some medals and tokens honoring royal events or showing royal personages in connection with Canadian anniversaries have been distributed in large numbers. Medals were struck to note various major anniversaries of the reigns of Victoria, George V, and Elizabeth II.

The 1927 medal for the 60th anniversary of Confederation has portraits of Queen Victoria and King George V on the obverse, and the Royal Arms of Canada on the reverse. These arms were only officially adopted in 1921, though previous designs without formal royal assent had been used for half a century. The central design features the emblems of England (three lions), Scotland (a standing lion), Ireland (a harp), and France (three fleurs-de-lis, or lily flowers).


**Figure 5.397.** Confederation anniversary medal, 25.5 mm.

These quartered arms are based on three maple leaves, rather oddly stylized in a sprig of three, something that does not actually occur on real maple trees. While the use of a symbol of France here indicates Quebec, the quartered arms hark back to the arms shown on some British coins as late as 1799, in which the fleurs-de-lis of France appeared to symbolize the long-obsolete claim of the British king to the throne of France. This claim was then dropped to mark the British alliance with the French House of Bourbon in the fight to restore the Bourbons to the French throne. Very large numbers of this medal were struck, and many have no doubt entered Canadian soil.

Some Canadian tokens and medals are considered with those from the United States in the material on kinds of tokens earlier in this chapter. Canadian coins are described in the material on the circulating currency of the three North American countries in Chapter 3.

## Mexican Tokens

Except as souvenirs, and later for the numismatic market, Mexican tokens have rarely crossed the border into the United States farther than towns on the border itself. The tokens of the United States and Canada have likewise rarely been used, or found in any number, in Mexico. The chief reasons for this are language differences, currency differences, and the cultural (and legal) differences that have dictated differing roles for various kinds of tokens on the two sides of the border.

There are exceptions. For example, the *recuerdo matrimonial* tokens used in many weddings are commonly used among Mexican American families in the United States, and have been observed in Filipino American and now other weddings as well. Religious medals in Spanish, often minted in Italy, are common among Catholics on both sides of the border. Some standard machine tokens without inscriptions in either language are commonly found on both sides of the border and are used in the same machines in either country. Along the border, where the same pockets and purses may be in Mexico and the United States at different times on the same day, the mix of tokens and medals (and coins) found in the soil may be very similar on either side of the dividing line, and this has probably been true as early as the mid-1800s.

This brief survey of Mexican tokens is intended to present some information not given in the previous section on tokens of the United States and Canada. Though different tokens were generally used in Mexico, the range of uses for the tokens is similar, so no attempt is made here to cover the same ground.

Small-change tokens in the Americas originated in Mexico City in the 1500s. A few of these tlacos are shown in Chapter 3. A constant problem for both employers and employees in areas of Mexico at a distance from the cities and towns, all the way up to the end of the nineteenth century, was the effective absence of coins, particularly smaller denominations, in rural areas. Gold and silver gravitated toward cities where manufactured, imported, and luxury goods were available. From the cities, in turn, there was a tendency for higher-value coins to be shipped abroad to pay for imports. One of Mexico's main exports for centuries was coinage, produced at Mexican mints more cheaply than it could be abroad due to the locations of the mints near productive mines. Mexico was more coin rich than Canada or the United States until well after the California Gold Rush, but the supply was spotty, and the constant pull of international trade kept gold coins and pesos flowing toward the ports and overseas. The dynamic was similar to that in the United States that kept the rural areas, particularly in the West, cash poor.

## *Local Tokens*

During the first half of the nineteenth century, cities, towns, and villages often had their own copper tokens, generally without any indication of value. This was during the same period when Canadians used any copper token or counterfeit coin that they could find. In the United States as well, during two time periods, 1812–16 and 1832–44, tokens and worn or doubtful coins were accepted even in big US cities. Mexico, though somewhat better provided with coins than its northern neighbors, had a constant shortage of small-denomination coppers in most places at most times, and tokens were accepted at the market. A look at the tokens listed in the first section (Nos. 1 through 1,116) of *Tokens of Mexico* by Frank W. Grove (1989) will provide an idea of the simplicity and crude designs of most of these tokens.

Counterfeiting may not have been considered a problem (except by the legitimate issuers), as it would have provided more needed small change. Many of the tokens bear the initials of people not known to history or who have not been identified yet as token issuers. One example of such a token is listed in Grove as number 1032(b), from Valladolid in Yucatan. Valladolid changed hands many times as a result of coups, wars, revolts, and general disorder. It was the town where summary executions of Maya leaders in 1847 sparked the Caste War. This token appears to be similar to others from towns in southeastern Mexico from 1820 through 1850, but until someone can identify the issuer, whose initials were R. P. Y. there is little hope of pinning down a date. This particular example appears to have been used as a button at some time, but it was originally made as a token.


**Figure 5.398.** Copper token of Valladolid, Yucatan, 28 mm.

## *Hacienda Tokens*


**Figure 5.399.** Half-real hacienda token, 20.5 mm.

As in the United States, large agricultural concerns often used tokens to pay workers and accepted the ***hacienda tokens*** for purchases of both necessities and luxuries in the plantation stores. Earlier tokens were usually denominated in reales, even after Mexico adopted decimal coinage. This token was issued in 1888, two decades after decimalization, but the "½" meant one-half a real, or six and one-quarter centavos. Camilo Camara had it struck for use at his hacienda at Ydzincab in Yucatán (Rulau 2000:80).

A later token with a decimal value of "50" centavos was used at Hacienda el Cuyo, which was owned by the Ancona family, on the eastern border of Yucatán at Tizimín. It was placed in circulation in 1895 (Rulau 2000:82).


**Figure 5.400.** "50" centavos token issued at Tizimín, 26.5 mm.

*Peones* in Mexico were treated very much like tied labor in parts of the postslavery United States, including a race-defined caste system that left many Indigenous groups under the complete domination of big landowners in their areas. In fact,

comparisons to slavery itself were made, and the fact that the right to the labor of peones could be bought and sold gives credence to this comparison. The stark brutality of conditions on many plantations is described in the 1915 novel *Los De Abajo* by Mariano Azuela, which was later published in English as *The Underdogs*. As the novel describes, in fiction drawn from life, these conditions were a big factor in the violent overthrow of the former local rulers during the Mexican Revolution during which massive rebellions against predatory landowners took place across much of southern Mexico.

After the Mexican Revolution, the use of token payment systems was effectively outlawed. One of the last hacienda tokens issued in Yucatán was the "5" centavo piece. It was struck in France and was used on the hemp and sisal plantations of a big landowner with the ironic name of Peón. Augusto L. Peón used these until all use of plantation tokens in Yucatán was stopped by Constitutionalist revolutionary military governor Toribio V. de los Santos in February, 1915.


**Figure 5.401.** Peón token of Yucatan, 16.5 mm.

As Russell Rulau writes, "Previous federal edicts (Nov. 30, 1889; March 25, 1905; Dec. 28, 1913) had prohibited the use of tokens, but these edicts were ignored or evaded by the landowners and corrupt officials of Yucatán. The Decree of 1915, however, was backed by bayonets" (Rulau 2000:83). Later in February, a coup by hacienda owners overthrew de los Santos, but in March a new Constitutionalist governor, Salvador Alvarado, arrived with many more bayonets, and the abolition of peonage and of hacienda tokens was reimposed very firmly and finally.

## *Tally Tokens*

Workers on most big farms were paid by piece rate, particularly at harvest time. Even when the workers were paid in (very small amounts of) standard currency, tally tokens were often used to keep track of the work done by each harvester. It is hard for us to know, a century later, whether the tally tokens also functioned as hacienda currency and were spent at the hacienda store. It is possible that archaeologically derived information may help provide answers if the archaeologists are aware of the question. Some tally tokens, as well as other hacienda tokens, were of unusual shapes. The triangular piece with rounded corners and a center hole was used in 1901 at Cafetal Triunfo, a coffee plantation reported to have been in Chiapas State (Grove 1989:275). It represented one-half basket of coffee beans, which could either have meant a standard basket that was half-full, or a full half-size basket used by child laborers.


**Figure 5.402.** Chiapas coffee bean tally token, 23 mm.

Also used around the turn of the century was the aluminum tally token from Hacienda Santa Cruz in Yucatán, owned by Mónica Contreras de Campos. The token acknowledges the delivery of one thousand leaves of henequen, agave, harvested for its fiber (Rulau 2000:83).


**Figure 5.403.** Yucatan henequen tally token, 35 mm.

As in the United States during the Civil War, silver, gold, and even some copper coins went out of circulation during the Mexican Revolution of 1910–17. In some places at some times, local currencies were used, but very few tokens were introduced during this period to enable businesses to operate during the coin shortage. Not only was paper cheaper, but tokens had acquired a bad name in Mexico, as instruments of coercion and exploitation, and the revolutionary forces disapproved of the use of private substitutes for money. Paper money and scrip dominated in circulation. The local currencies are noted in Chapters 3 and 6.

## *Cooperative Bus Tokens*

A feature of the Mexican transportation system that gives rise to some tokens is the cooperative bus line, such as the "Cooperativa de Transportes de Nogales," in the State of Sonora. "Good for one passage" it says in Spanish, that is for one fare. Each driver may have his own bus; though sometimes buses are cooperatively owned as well. The fares are set centrally, and tokens or tickets are used and redeemed by each driver after his work shift. This cooperative was reported to have shut down before 1970.


**Figure 5.404.** Cooperative bus token from Nogales, 23 mm.

## *Vending Tokens*

One distinctive feature of Mexican token use has been that during several notable periods, inflation in Mexico has greatly exceeded inflation in the United States and Canada, and tokens have been

used to accommodate super-inflation in ways not seen to the north. While a vending machine manufacturer may have needed to retool a machine for new prices on an annual or biennial basis in a city north of Mexico, in Mexico this was impractical from the late 1970s through the early 1990s. The adjustment would have been needed weekly or even daily during some periods. The solution was to avoid using coins and substitute a token that could be sold for steadily increasing prices. So a Pepsi-Cola from a vending machine, once costing a single peso, required a token that sold for as much as five hundred to one thousand pesos just before the currency revaluation of 1992.


**Figure 5.405.** Pepsi-Cola token, 17 mm.

This example carries the advertising slogan "Tome Pepsi-Cola" (Drink Pepsi-Cola) on one side. The other side is marked "Utilicese unicamente en vendadoras Pepsi-Cola." With the word "machine" being understood rather than stated, this means "Use only in Pepsi-Cola vending machines."

## *Other Machine Tokens*

Many vending machines were originally developed to use tokens, and only with improvements in machine design were they reset to use coins. In many cases, the tokens continued in use or returned to use during inflationary periods, even as similar or identical machines in the United States and Canada used coins instead. So several new types and varieties of the tokens used to operate the telescopes atop the Torre Latinoamericana in Mexico City (Rulau 2000:42) were introduced during the 1970s through 1990s. By 2004, when one of the authors visited the top of the tower, the telescopes had been modified to require standard Mexican coins.


**Figure 5.406.** Telescope token, 21 mm.

### Fichas sin valor

In imitation of wording designed to meet legal requirements in the United States, many videogame tokens and other recent Mexican tokens use equivalent Spanish phrases to emphasize that the tokens have no monetary or merchandise value. The token from Corporación Monitores del Pacifico (CMP) in Hermosillo, Sonora State, uses the phrase "ficha sin valor" ("token without value") to assure us that the token has no cash value. The mintmark "HH" informs us that the token was minted by Hoffman & Hoffman of Monterey, California, before 1999 when they adopted a new "HM" mintmark. The bright desert scene on the obverse goes with the common Hermosillo slogan meaning "Hermosillo is the city of the sun."


**Figure 5.407.** Hermosillo video *ficha sin valor*, 22.8 mm.

By 2010, machines throughout North America were being redesigned to use electronic cards, plastic or paper, rather than either coins or tokens. This has led to a sharp reduction in the number of tokens being produced.

## *Occult Tokens and Medals*

For well over half a century, large numbers and many varieties of tokens have been sold in Mexico at *botánicas*, shops that deal in herbs, potions, small figurines, and other items connected with healing, blessings and curses, divination, and the other occult arts. Some of the tokens are meant to be placed on home altars, some to be carried, and some to be given to particular people. It can be helpful when magical tokens are found to know something of the practices and beliefs of those who use them. Two samples are provided here to indicate something of the expected appearance of such pieces, but detailed works on the subject will be required for interpretation. The token with a six-pointed star inside two circles inside two squares inside two more circles, and some cryptic symbols, is of an older type. The slightly squiggly lines are descended from Arabic inscriptions on much older pieces from Spain. While the type is old, this particular piece was struck about 2003 in Mexico City.

**Figure 5.408.** Occult token, 26.5 mm.


**Figure 5.409.** Talisman of Aladdin, 26.5 mm.

A contemporaneous piece, also struck in Mexico City, is inscribed "Talisman de Aladino" (Talisman of Aladdin) and has a representation of the Djinn arising from the lamp when it is rubbed by Aladdin. Hundreds of other tokens and medals, some with designs on one side, some on both, and many now with colored enamel designs, run the gamut of Greek, Roman, Egyptian, Arabic and East Asian mythology, pre-Columbian Mexican iconography, and contemporary design. They are often used by the same individuals who use Catholic saints' medals, rosaries, crucifixes, and the rest of the Christian iconographic range. Some shops and peddlers carry only orthodox Catholic material, but many are quite eclectic. Particularly since about 1970 such material is also used by some Mexican American families in the United States, and a somewhat abbreviated stock of occult medals may be found in many botánicas north of the border.

## *Commemorative Medals*

Commemoratives take different forms in different countries depending on local conditions, laws, and tastes. In Canada, for a period of several decades from the late 1960s, a local event or anniversary would be commemorated on a piece of municipal currency. At the same time in the United States, it might be commemorated on a medal struck to the order of a local civic organization or coin club, or with a wooden nickel. In Mexico, a commemorative medal would be struck, either by a private firm or at the Mexico City Mint. Some are of large module, but others are quite small. An example of a larger one is the medal issued by the large shoe firm, Calzado Canada. It celebrates the 1974 inauguration of Calzado Canada's 1183rd retail store, attended by former President Echeverria, Governor Orozco of the State of Jalisco, and Mayor Delgado of Guadalajara. As their full names and titles are spelled out, a large medal was necessary.


**Figure 5.410.** Calzado Canada commemorative medal, 35 mm.

**Figure 5.411.** Papal visit medal, 38 mm.

A more recent commemorative medal, produced in very large quantities in several varieties, is the undated piece from 1999 showing the old basilica at Tepeyac; the image of Holy Mary of Guadalupe, Patroness of Mexico; and a portrait of Pope John Paul II. The medals were on sale by countless vendors to the enormous crowd that witnessed the visit of John Paul II to Tepeyac in 1999, and they remained available in the Mexico City area for several years afterward. The modernistic new basilica next door, with perhaps less appeal to traditional Mexican taste, is not shown on the medal, though it houses the sixteenth-century image of the Lady. This common variety has a blank reverse, and some examples have been seen fastened to furniture, plaques, doors, and even the dashboards of vehicles.

The Mexico City mint has produced many small copper-alloy medals for sale, in series showing writers, pre-Columbian art, mint facilities, and so on. These appear to be made in large numbers, and to be sold for very small prices. One from 1980 with a portrait of Dante notes his 445th birthday.


**Figure 5.412.** Medal marks Dante's 445th birthday, 19 mm.


**Figure 5.413.** Mint medal for Expo 84 in Nuevo Leon, 19 mm.

Another small medal, from 1984, was issued for Expo 84 held at San Nicolas de los Garza, in the State of Nuevo Leon.

Since these pieces are of low value and are relatively small, quite a few of them can be expected to enter the archaeological record. Most can be dated. As for their use immediately before deposition in the soil, it is likely that most were being played with by children. Children in Mexico also play with the base-metal coins, big and small, of the pre-reform period leading up to 1992. It is likely that more pre-reform coins have been deposited in the soil since the devaluation of the old coins than during the entire period of their use. Other than as toys and very affordable collectors' items, the demonetized coins are now valued only as scrap metal.

Other Mexican tokens and medals have served uses similar to those described in the material on kinds of tokens and medals. The changing mix of Mexican coins in circulation is reviewed in Chapter 3, on the circulating currency of the three North American countries.

# Paper Money


Paper money is usually not something with which archaeologists need be concerned. Paper does not last long in humid soil; obsolete notes were regarded as useful for starting fires; and insects find them tasty. So in broad areas of North America, even historic archaeologists working with relatively recent material are unlikely to encounter paper money. Still, it can happen. In dry areas, inside the remains of buildings, and when the paper was placed in a waterproof container, paper money may be encountered.

In certain dry areas in Egypt, paper documents from two millennia ago have been recovered. A few are notes involving exchanges of money and goods, some rather similar to paper money in concept. In North America, finds of paper money have been made inside walls, under floors, and buried in jars, cans, and boxes. However, paper money is too complex a subject to cover in a few pages in any detail. As paper money and other paper financial documents are rarely found archaeologically, our treatment of them is limited to a few pages of advice and some pointers to better sources of information.

Paper money is almost a constant in the history of North American monetary circulation. Due to the shortage of gold, silver, and copper at most times in most places, paper has played an outsize role in enabling the exchange of goods and services. Most paper means of exchange have been private, between merchants, big farmers, factory owners, and bankers. But for considerable periods, there has been government involvement in the issuance of paper money as well. These government issues are the best documented of paper instruments of exchange, and they are covered in greater or lesser detail in a number of standard catalogs, as well as in thousands of articles and papers. Not coincidentally, they have value to collectors, and the changes in value in the collector market are the focus of many of the catalogs.

The Massachusetts two-shilling note of 1741 is an example of a note printed on one side. Most later notes were printed on both sides, part of the continual attempt to foil counterfeiters. Official banknotes ranged in face value from one penny at the lowest (a rough equivalent of a quarter-dollar or half-dollar today, depending on time and place), on up to ten pounds in some colonies (very roughly similar to one thousand dollars today). Some higher denominations were issued as the colonies moved toward independence in the 1770s.


**Figure 6.1.** Colonial banknote from Massachusetts.

In the French colonies, too, paper (or rather cardboard) was important in commerce. In fact, a basic form of money was "playing card money," in use sporadically from 1685 through the early 1720s in New France, and then continuously from

1729 until the French defeat in 1759, with the last redeemed in 1763. It was made by adding inscriptions and signatures to whole or partial playing cards. Some playing cards without any color printing were made just to use for money, and the 1729 issue was mostly made of plain cardboard. The corners were cut to indicate specific denominations for the illiterate.

Some other instruments of exchange have much less value to collectors, and many of them are more informative to someone studying a community's economic and personal relationships in the past. Some years ago, a particular trend in economics led some to reexamine the question of availability of money, specifically coins, in North America during the colonial period. They did not examine the evidence, for that might have restrained their theorizing. Rather, they proved quite conclusively in their own minds that coin must have been readily available during the colonial period because it was available on other continents, and trade provides money where it is needed. This is a simplification, of course, but the theory was simple, too.

Fortunately, William T. Baxter of the London School of Economics and Political Science found time to examine surviving merchant ledgers from the colonial period that are held in historical societies' and universities' libraries in the United States and in Britain. His study was completed in 2002 and published in 2004 in *The Accounting Historians Journal* (Baxter 2004). The shortage of cash was definitely confirmed as a chronic problem that "hindered and distorted trade," but "ingenious ledger entries" to some extent enabled the merchants to work around the problem. Triangular trades (in which A trades a definite value of some commodity to B, who has nothing that A needs in stock but arranges to transfer the credit to C, who has commodities needed by A, in exchange for which B will pay him in some commodity needed by C) were quite common and often involved more than just three merchants. It also was frequent for a note to be issued by a merchant in exchange for some commodity received, to be redeemed later in some other commodity of a particular value. Such notes could be traded around a community, in which the wealth and reliability of each merchant was known to the others and to other prominent citizens, tradesmen, farmers, and laborers. Such notes increased the effective money supply.

A note of credit from a particular big merchant, even one located on another continent, could be traded for a note of debt owed to the same big merchant, and when the transaction was completed by submitting the appropriate papers to the big merchant, something very like a modern bank transaction resulted. Many of these transactions were not legal in England, but were upheld by colonial courts because they were basic necessities if commerce were to be transacted at all.

A big component of trade was simple debt in which the buyer undertook to pay the seller later, sometimes a considerable time later. This could enable transactions to proceed when different products and produce were only available in different seasons, and certain official payments from England might only arrive once a year.

Some notes were valued in specific quantities of commodities, rather than in a sum of money. Notes for beaver pelts (of specified quality), tobacco, grain, and many other commodities are known. Most trade did not involve coins. If that had been required (as it was indeed required in some laws imposed from London and ignored for the most part by reasonable people), then there would have been very little trade.

Analysis of material remains is always most successful when surviving written records are consulted to help understand the actual conditions of the day as seen by participants. This can help make up for the low survival rate of some artifacts compared to others. Standard catalogs of paper money cover all North American series in fair detail, and specialized references to the more obscure early colonial and regional notes can normally be found online. It is always a good idea to take the representations of sellers of banknotes with a grain of salt and check more objective references for fuller information.

There were several postcolonial periods during which paper largely substituted for coins. During the American Revolution, again during the Hard Times when tokens and private or local paper money had to suffice, and certainly during the Civil War, the great bulk of trade depended on paper instruments. For different reasons, with a worldwide effect, trade for the last half-century has had less and less to do with coins, which are all "token money" without a precious metal component. During the Mexican Revolution paper was all that was available in much of Mexico, and tokens were not used, so even small denominations were paper.

A miserable little piece of paper money from the Civil War is the much worn twenty-five-cent note from North Carolina, issued a few months after secession that was to be paid "before January 1st, 1866." For the Confederacy, 1866 never came, and the notes were never redeemed.

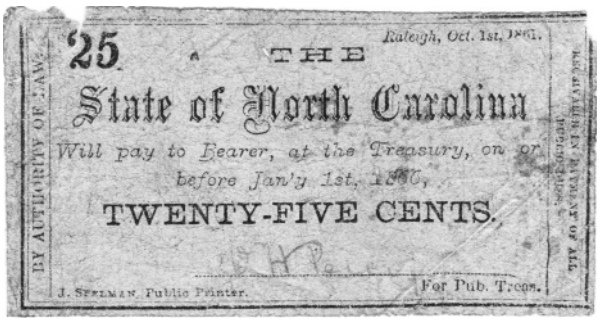


**Figure 6.2.** State of North Carolina twenty-five cents from beginning of Civil War.

This 20-centavo note issued in 1914 to pay the Moreno Brigade, at the General Headquarters of the Conventionalist Army in Autlan, Jalisco State, has suffered from a common affliction of paper artifacts. Termites have eaten several percent of the note (see example at the end of the chapter). The Conventionalist Army, led by Francisco Villa and Emiliano Zapata, was dislodged from Autlan by the Constitutionalists under Carranza, who controlled most of the country by 1917, and the notes were never redeemed.

Some financial instruments are simply not published at all. Most checks, for example, must be analyzed without much help from references. The private notes of merchants are not studied with anything near the enthusiasm with which government notes have been studied, as their value is much less in the banknote collector market.

One big problem with paper money is that anyone with a printing press could produce counterfeits, whether of good quality or not. And even a highly moral printer might be prevailed upon to produce counterfeits of the banknotes of an enemy country, or an enemy party. There are several types of

counterfeits, with some overlap: contemporary counterfeits made for criminal motives; contemporary counterfeits made by hostile forces during a war or other conflict; counterfeits made for fraudulent sale to collectors as originals; reproductions not intended to fool the buyer (but which often fool the buyer's descendants when the banknotes are discovered in the buyer's effects); advertising pieces with or without distinguishing inscriptions; and marked facsimiles sold (at least ostensibly) for educational purposes. There are also fantasy notes that have the appearance of colonial notes, or Confederate notes, or other notes with stories behind them, but which do not actually look like any real banknotes. Some of the counterfeits and reproductions vastly outnumber the real thing, and are quite old enough to be found by an archaeologist. Facsimiles of Confederate banknotes were being sold by 1866, sometimes at a higher price than the real things that were very inexpensive that year.

Without going into lengthy detail it is not possible to provide a satisfactory guide to distinguishing real banknotes from fakes. If banknotes are found, an expert must be consulted. The first step can be to consult any paper money collector who is absolutely trustworthy, and will not steal (or trade for) the banknotes. The collector will know others, or know of others, who may be available to examine doubtful notes. Local coin dealers, sad to say, may know less than you about the subject, even if you know nothing. But there is often at least one knowledgeable dealer in a particular area who can give a good idea of the origin and authenticity of notes that are found. If a number of banknotes are found, it would be a good idea to consult officials of the nearest club of banknote collectors, and ask for an introduction to a knowledgeable senior member.

If notes are not genuine, but are found in archaeological context, they are still of great interest to the scholar. Counterfeits are just as indicative of past activity as are genuine notes, and sometimes a good deal more interesting.

Considered with banknotes are other forms of paper instruments of exchange, including checks in all their many varieties: bonds, stocks, receipts, and the notes of ideologically inspired economic groups, such as cooperatives and "labor exchanges."

An example of a paper means of payment that is far more informative than money itself is the paycheck from the North Fork District, Washington County, Virginia, to teacher N. W. Denton. The date is December 22, 1877, which was the Saturday (then a workday) just before winter vacation. The paychecks were probably issued then, rather than at the end of the month, so that the teachers could use the money for Christmas. One month's pay was $27.50, and the document bears the signatures of the clerk and the chairman of the school trustees. The check is not signed on the back, but it has been cancelled with a cross-shaped punch, meaning that it was redeemed (see Figure 6.4).

A movement that swept the country in 1896, not coincidentally when W. J. Bryan was campaigning for the presidency and to extend the money supply through "free coinage" of silver, was the labor exchange. Local groups issued notes that were denominated in units of labor time, rather than in dollars. In practice, those involved agreed on an equivalency rate between dollars and labor-time units. If the accountants and organizers were competent, had community support, and the community was somewhat isolated, the project could work quite well. If any of these factors were missing, collapse tended to come sooner or later, particularly when hostile fire from such "gold bugs" as bankers and Eastern politicians was directed at the project. This particular note, from Aspen, Colorado, has writing in the margin from someone who spent time in Aspen, who mailed the note to a friend elsewhere. We are told "This is good for 10 cents most anyplace in Aspen." The marginal note enables us to figure the value of a "unit," which is pictorially represented as a ten-hour workday. This note is for one-tenth of a "unit," that is for one hour of labor. One hour, as was standard at that time for many low-level jobs, paid ten cents, and the standard wage was one dollar per day. Both obverse and reverse are amply supplied with pictorial and written propaganda for expanding the money supply by "capitalization of labor" (see Figure 6.5).

Paper financial instruments, though of basic economic importance in North American history, are usually not recovered from archaeological sites, but when they are, they can be very informative. Archaeologists should be aware of the possibilities, and ready to ensure that any such material that is found is properly curated, photographed, and analyzed thoroughly.


**Figure 6.3.** Autlan, Jalisco, 20 centavos.

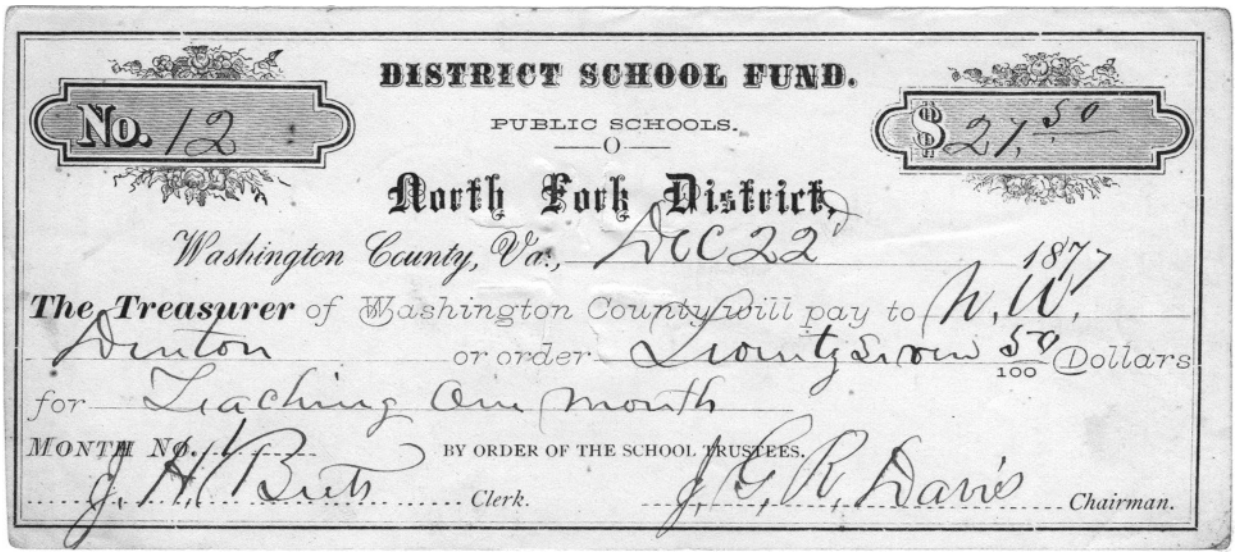


**Figure 6.4.** Virginia teacher paycheck, 1877.


**Figure 6.5.** Labor exchange note from Aspen, Colorado, 1896.

# Coin Production Methods

Coins have been produced in two ways, by striking and by casting, although there are variations on both methods. These two methods go back to the beginning of coin production more than 2,600 years ago.

## Cast Coins

Coins arose separately at different times in China and in Asia Minor in the eastern Mediterranean region. In China, by 3,000 years ago, efficient mass-production of small copper-alloy tools, utensils, and decorations was well developed. Some tools, in particular, were commonly used in trade. Cowrie shells, holed for stringing, were used as money before the Shang dynasty (ca. 1766–1154 BCE). Carved bone imitations of cowries came into use by the end of that dynasty. The date of the first production of bronze imitation cowries is not known, but it was at least 2,750 years ago. These were the very first small bronze pieces of money made in China. Larger pieces of money in the shape of spades, far too small for actual use as spades, circulated along with the bronze cowries by 2,650 years ago. Soon thereafter, inscriptions appeared on both spades and imitation cowries. The cowrie imitations changed into the small bronze pieces called "ghost face money" or "ant-nose money" because the characters of the inscriptions look like a small face. The money had no other connection with ghosts or ants, despite some recent fables. A few years after the appearance of the first spade money, knife money was also produced as small, nonfunctional bronze knives with inscriptions on the handles and sometimes the blades. By 2,400 years ago, both knife money and spade money were cast with holes for stringing, and they are usually recovered from archaeological sites in groups that had been strung together.

Possibly inspired by the round handles of some knife money, round pieces of bronze money with center holes were produced by roughly 350 BCE. The earliest holes were round, but within a few decades the square hole became standard. Some consider only the round pieces to be coins, as they are flat discs like the coins of other countries. But some consider all the mass-produced bronze money from this period to be "coins," going by function rather than form. As noted by Hartill (2005:82) "it is apparent from archaeological finds that most of the various kinds circulated together." Only after about 220 BCE did the spades and knives fall out of circulation, and the round square-holed coins became the only circulating currency. There was a brief attempt under Wang Mang (7–23 CE) to revive the knives and spades as part of a needlessly complex currency system, but with the overthrow of Wang Mang in 23 CE, the older forms of money were doomed. By 40 CE, large official issues of round coins with square holes resumed, and they were the basis of Chinese currency for most of the next 1,900 years.

**Figure 7.1.** Ancient cast Chinese money: "Ant-nose" money (400–220 BCE), pointed tip knife money (600–400 BCE), and large (220–180 BCE) and small (136–119 BCE) *ban liang* coins.

Like other mass-produced cast artifacts coins were produced in molds with multiple impressions to make several or many coins at one time. The mold for each of the coins was connected to the next one by a small channel for the molten metal to flow through, which produced a final casting of coins connected by thin sprues. When the metal cooled and hardened, the sprues of waste metal were returned to the melt pot. After the molds were broken apart, and the sprues removed, the coins were filed or ground down on the obverse and reverse so that the rims and the tops of the inscriptions became flat. A number of coins were then placed on a square rod and turned against an abrasive wheel to smooth the edges and remove all signs of the sprues. Though other reasons were invented over the centuries to rationalize the square holes in the coins, and in fact the holes were square so that the coins would not turn on the rods during the grinding of the edges.

**Figure 7.2.** Mold for producing *wu zhu* coins, ca. 100 BCE. Photo courtesy of Gary Lee Todd.

While casting techniques improved, and coin production became more efficient over the next two millennia, the process remained basically the same until the introduction of machine striking of coinage in Chinese mints in 1889. Production of these small coins, the only form of small change in large areas of China for long periods of time, often exceeded one billion pieces per year. Some very old coins are common today due to the large numbers of ancient coins that continue to come out of the ground at construction sites and on farms.

High-value coins were later introduced into China, but almost all coins cast in China for millennia were low-value, base-metal pieces made from copper alloys, iron, or zinc. The routine production of cast coins was later introduced into Vietnam, Japan, Korea, and a few other places in Asia. Coins from China, Vietnam, and Japan would be brought to North America in considerable numbers (for noncurrency uses), and they are often found in archaeological sites on this side of the Pacific Ocean.

Casting has been used in other countries as well, and some of the first very large Roman coins were cast. But most cast coins from North America are emergency issues or counterfeits, made to imitate the designs of struck coins. A few tokens and medals, particularly large medals, are still produced by casting.

## Hammered Coins

In western Asia Minor, some 2,700 years ago, it became common for small buttons of electrum, a naturally occurring alloy of gold and silver, to be impressed with patterns and used as money. To regulate the metal market, city-states and kingdoms, including Lydia, stamped official marks on the pieces of metal to indicate that the quality of the metal was found satisfactory by the authorities. By the time of King Croesus of Lydia (560–547 BCE), ruler of almost all Greek cities in western Asia Minor, distinctly different coins of fairly pure gold were being made, and silver coins soon followed. These early coins represented much larger values than the copper-alloy coins of China and were used in major transactions between merchants and for large purchases.

It was not until about 490 BCE that the first Greek coins were made from copper, and copper or copper-alloy coins were produced by many states by half a century later. These lower-value coins filled the need for a supplement to small-scale barter in the marketplace, and this brought coins into use by most of the population. Coins could then be used for most purchases.

Originally the coin blanks or ***flans*** were cast. The cast blanks were then placed between two bronze or iron dies, and the top die was struck by a heavy hammer. The designs that appeared on the surface of the coins did not appear during the casting of the flans, but when the coin was struck. The dies of some early coins were carved by gem carvers, who also produced cameos so the designs they carved for coin dies were very attractive works of art. In the West, the finest ancient Greek coins became the standard that few later could surpass.

Roman coins, supplanting local issues in much of the Mediterranean area by the reign of Augustus (31 BCE–14 CE), were efficiently produced in large mints. Improved hardening of the dies, and efficient organization of labor, enabled some Roman mints to produce millions of coins per year.

Although there were many improvements in production techniques, particularly in Islamic countries, coins were still struck by the use of hammers into the 1600s, and in some countries (notably some states of British India) well into the twentieth century. Various methods were introduced to produce the metal blanks from which the coins were struck, including cutting short lengths from bars of metal and chiseling blanks from metal sheets. A variant on the hammer was the dropped weight. The weight, held on a cord or pole, was raised and dropped onto the top die, hitting it precisely with a known force and enabling the production of coins of more consistent appearance. But in most countries, coins were struck by hammers until the adoption of milled coins.

**Figure 7.3.** Striking coins between two dies with a hammer. Illustration by Brian Garvey.

## Milled Coins

"Mill" and "milling" have many meanings, but *milled coins* are simply coins produced through the use of machinery. After the period of production of ***cob*** coins, ending in the mid-1700s, almost all coins and tokens produced in North America were machine made using one of several types of presses.

Screw presses are very old, but the first ones were made of wood and used for such operations as extracting olive oil. Technological improvements allowed the development of metal screw presses that could exert considerable force, and in 1553 a screw press was used to produce coins at the mint in Paris, France. In 1561 similar machinery was used at the London mint. But in both countries, opposition from mint workers forced abandonment of the machinery. Screw presses were put back into use in Paris in 1640 and in London in 1662, a time when their use was quickly spreading around Europe and America.

**Figure 7.4.** Mexico City mint medal showing a screw press.

During the 1600s, several European mints experimented with roller presses that impressed designs into somewhat elongated flans, but this technique was not used for long. A similar method is used today to produce elongated coins at tourist sites.

The earlier screw presses used human power to turn the screw, but draft animals were soon harnessed to the work, and water power was later used to turn belts that turned the screws on the presses. Right up until today, some screw presses used to make medals are still turned by human hands. The collar was introduced with the screw press, and coins struck in collars that restrain the horizontal expansion of the flan during striking can be made with neatly smoothed, inscribed, or ***reeded edges***.

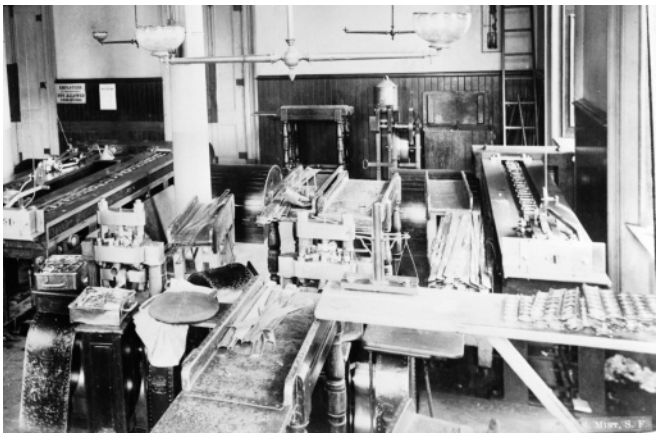

**Figure 7.5.** Cutting room, San Francisco mint, 1885. Photo by Runners and Stateler, ca. 1882–85.

Water power was also used to roll metal into sheets of precise thickness and then cut round coinage blanks from the sheets. This enabled the mass production of the blanks and made the work go much faster. In 1788 when Matthew Boulton of Birmingham, England, harnessed steam power to coinage machinery, and the next step forward in mass-production was taken. Boulton produced coins for several countries and minted many of the "Conder tokens" used in Great Britain at the time. Eventually Boulton was able to obtain a contract to produce British coins in 1797. At this point steam provided the power, but the power was still applied to a screw press.

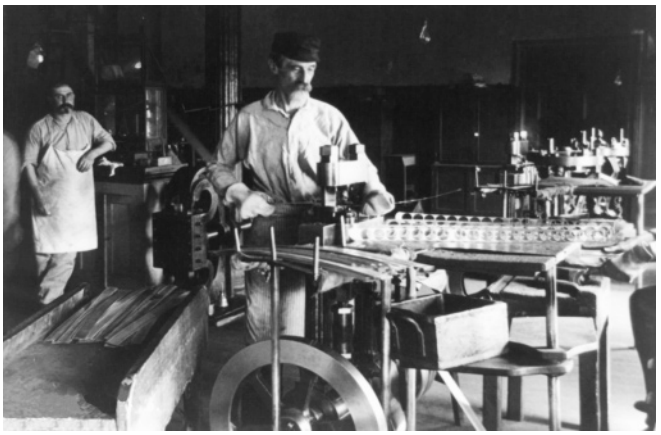

**Figure 7.6.** Punching coin blanks, New Orleans mint, 1897. Photo by E. S. Gardner, 1897.

The next major advance came during the 1820s with the development of a steam-driven, knuckle-lever press developed by Dietrich Uhlhorn. Further advances came toward the end of the century with the use of electricity to provide the power, but still using essentially the same type of press.

Today, with automatic feed mechanisms, multiple dies in use at once, and much harder and stronger dies, modern minting machines are able to produce billions of coins per year. Once harder dies could be produced, the coinage metals expanded from the relatively soft gold, silver, and copper into such harder materials as steel, nickel, and stainless steel. Four mints in the United States, and one each in Canada and Mexico, produce all the coins that circulate in North America, and each mint contracts to provide coins for other countries as well.

**Figure 7.7.** Milling blanks into flans, New Orleans mint, 1897. Photo by E. S. Gardner, 1897.

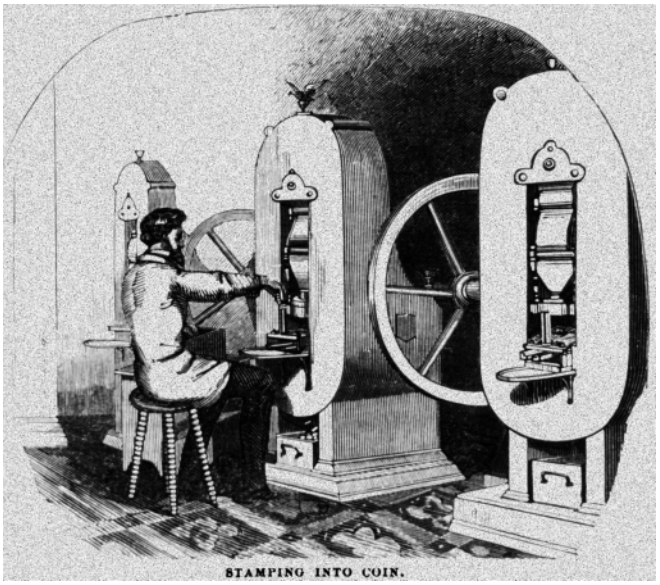


**Figure 7.8.** Stamping coins with steam-driven presses, San Francisco mint, 1856. Engraving by Herrick, from *Hutchings' California Magazine*, vol. 1, October, 1856.

# Numismatic Approaches to Analysis




## Comparing Numismatic and Archaeological Methods of Analysis

The methods of analyzing coins used by archaeologists, as well as the philosophical underpinnings of archaeology, as practiced in North America today, may seem esoteric to many numismatists. However numismatists can expand their understanding and appreciation of tokens and coins by learning how archaeologists study and analyze this form of material culture. Examination of the numismatists' essential interests and methods of organizing numismatic material is good way to begin comparing the two fields. Also, the nomenclature, including typologies, and customary taxonomies used by numismatists are introduced in this chapter. Using the same basic language of description and organization of numismatic materials will help archaeologists conduct analysis; it should be especially helpful to those with limited experience working with this class of artifacts. While this chapter describes how most numismatists approach their materials, it is not intended as a criticism of how anyone choses to enjoy coins and tokens for pleasure. Rather, this comparison of how coins, tokens, and other exonumia are viewed and analyzed in each discipline is intended to improve communication and understanding between people from both fields and to lay the groundwork for more collaborative work.

**Figure 8.1.** *The Moneylender and His Wife* appear to be making a very careful examination of their coins, making this painting a favorite of numismatists. Painting by Quentin Matsys, 1514.

### *Numismatists as Collectors*

There are different kinds of numismatists, just as there are different kinds of archaeologists. Some are in academics or are museum curators, and while many have some formal education in the field, many more are self-educated enthusiasts. It is likely that almost all of them are, on some level, collectors, as well as educators, curators, or enthusiasts (Tompa and Brose 2005: 205–20). After all, coin collecting is one of the most popular hobbies in the world, and has a long history in places where standardized money has been used for any significant length of time.

While the title of the painting suggests that we are looking at a banker and his wife working on accounts, the attention given to the coins seems much more intent than mere counting or accounting would require.

As specialized collectors, numismatists have the same reasons for their interest in collecting as do collectors of other types of material. Collecting, including putting materials such as sea shells or rocks in a meaningful order, and sharing information with others, was an essential survival behavior for the millions of years that our species lived as hunter and gatherers. It should be no surprise that examining the various behaviors related to collecting provides many insights into how people organize and describe their material world, including the numismatic portion of it. There are five main reasons why anyone becomes a collector (Akin 1996): 1) to satisfy a sense

of personal aesthetics; 2) to make connections with the past, both personal and historic; 3) to satisfy a deep-seated desire for completion and control of their material surroundings; 4) to enjoy the thrill of seeking and finding special items that fit their collecting criteria; and 5) for profit or financial security.

As with all other collectors, any individual numismatist has a different mix of these reasons for an interest in collecting coins. Professional museum numismatists will certainly be different from the casual hobbyist, but it is important to keep all of these aspects of their collecting interests in mind when discussing the numismatists' motivations for collecting, learning about, and understanding their material. For archaeologists, understanding how collectors interact with their collection; how they organize and manipulate, sort and store the material, can aid the analysis of numismatic artifacts that come out of the ground. This is especially true when working with recovered hoards (Akin 1996:108–14).

Professional numismatists, and others who study and collect tokens and coins less formally, may describe the physical appearance of the material in the much the same way as many archaeologists. The basic descriptive vocabulary used in numismatics developed when the two fields were developing in association with each other over the last three centuries, mainly in Europe. While there is a lot of similarity in the terminology used in these fields, there are still some differences in the descriptive nomenclature used by the two disciplines. These differences reflect the relative importance or value of certain aspects of the numismatic artifacts in each field. For example, the market value of a coin is of more interest to a numismatist who is trying to obtain it for a public or private collection than it is to an archaeologist who usually has no interest, or part, in selling them. There are also differences in what each field considers sufficient information for completing descriptions or proper analysis. For example, for the numismatist the best example of a type of coin is usually, with very limited exceptions, an example that looks the same as it did when it was freshly produced. On the other hand, an archaeologist values an example that may be battered, stained, or otherwise damaged because this can help an archaeologist understand what happened to the numismatic artifact before it was lost in the dirt. Once the numismatic material is ready to be sorted for inventory or display, the key words chosen for cataloging purposes in each discipline may also be different, sometimes depending on how familiar the archaeologist is with established numismatic classification and terminology, or vice versa. Certainly, the way that collectors of numismatic material put items into order will be affected by the reasons why they collect in the first place.

### *The Differences in Approach*

When investigating or studying coins or tokens, the numismatists' initial approach, descriptions, and primary organizing principles are based on the reason why the artifacts were made in the first place: as money or a money substitute, or other representative of circulating currency. In addition to the fun of identifying, describing, and finding out the market value of their pieces many numismatists develop interests in special aspects of coins and tokens; what political or economic entity issued them, when they were issued, the meaning of symbols or inscriptions on them, and what famous people might have had them in their possession at some time. If the piece was ever modified or used for some purpose other than as money, such as making a button out of it, or using it in jewelry, that modification is almost incidental to the numismatist and usually reduces the market value of the piece.

While there are many archaeologists who enjoy studying numismatic material, when it comes time to provide an identification and analysis of archaeologically recovered numismatic artifacts, they change gears and look at the material from a different perspective. For the archaeologist the numismatic material needs to be studied just as any other class of artifact to learn about cultures in the past. For that reason it is the function of the artifact at the time it entered the archaeological record that is of primary concern, and that may or may not have been connected with its use as money. This function must be considered in combination with the archaeological context from which the material was recovered in order to derive meaning from the artifacts and to understand their role in the lives of the people who were using them.

Numismatists identify and describe numismatic material according to its economic role in a general historical context. Archaeologists look at the same material as artifacts that can only be fully understood with the addition of their archaeological context, and it is the context that will define the artifacts' place in the culture and larger society where it was used and lost.

Numismatic materials that circulated in North America sometimes have complex histories and, as we have seen, many coins and tokens were put into service to fill a local need far from the time and place where they were created. For example, the function of Asian coins changed when they were transported to North America and were no longer being used as money when they entered their archaeological context. If archaeologists were to approach all recovered coins and tokens as money, as numismatists do, they could easily go astray in their interpretation of recovered wen. Chapter 2 demonstrated the significance of understanding which shell beads were being used as money. Opportunities for improving our understanding of economies in transition will be missed if we fail to recognize some nonstandard or "primitive" forms, such as achum, as money. It is because the archaeological approach begins with a description based on an artifact's function, which is derived from its archaeological context, that it is possible to identify and understand the noncurrency uses of coins.

## The Importance of Names and Descriptive Vocabulary

The need to name and organize objects has deep psychological roots (Muensterberger 1994; Akin 1996). Try as we might, people find it difficult to describe something without beginning with its function. Function refers to the part the object plays in human activity. The name of the object also almost always includes the purpose or activity for which the object was originally made, ignoring secondary or reuse activities. Giving an object a name that is derived from how it is used is taking a step toward interpretation (i.e., the object is a coin or token). While we need to start a description of an object with the function for which it was created, it is important to remain aware of the fact that the *original* function may not define the function of the object through its entire ***use-life*** or its function when it entered

into the archaeological record. People change the functions of coins and tokens, the ways they use them, and they have done it more often in North America than elsewhere.

If numismatists and archaeologists are going to work together successfully, it is necessary to devise descriptive categories for numismatic objects that are mutually understandable and will work for all the material. A descriptive category is any one of the regularly occurring aspects, or features, of an object's makeup that occurs as part of its composition. In the case of stone tools it would include the type of tool (projectile point or arrowhead), the type of stone (jasper), its shape (side-notched), and all of the other regularly occurring aspects of its makeup. For numismatic material the descriptive categories include type of tool (coin or token), metallic composition (silver, copper alloy), denomination (dollar, centavo) and so on. These categories normally develop out of common use without much thought being given to them. They were devised to allow us to quickly describe particular objects and compare examples of a type to each other in a rapid yet accurate manner.

The numismatist will normally describe or name a coin according to the place where it was produced, in combination with its value (Canadian cent, US dime, Mexican peso). In contrast, the archaeologist who wants to "name" an artifact for future reference will initially refer to it by using a combination of numbers and letters that describe where it was recovered within an archaeological site, and a basic functional identification (silver peso recovered in unit 6). Later, after it is cleaned and prepared for study, additional information using the same general language as numismatists use will be added to its name (Mexican peso + the artifact number that indicates it was recovered from unit 6, level 4, sidewall). The archaeological naming process should recognize the importance of context while acknowledging the fact that naming an object is the initial step in assigning its function, and the function may have changed, maybe even more than once.

## *Classification Categories and Taxonomies*

The term "taxonomy" is used to describe the framework of the important defining characteristics of a class of artifacts. Using a shared taxonomy of descriptive categories and terminology aids communication with others and also makes it easier to access written information or objects in a collection.

Using a taxonomy previously developed for another field of study is useful but has some limitations. Any collection, or group of artifacts, will be organized according to the interests of the people who are working with them. The major defining features of coins and tokens, such as metallic content, country, or place of origin and denomination, are fairly standard, and are reflected in the standard taxonomy used for most numismatic material. However, sometimes there are special aspects of the collection that require a particular set of descriptive categories, as when a collector is interested in trains on coins or train-related tokens. That collector may have the material organized according to railroad line, for example. Sometimes, especially when working with archaeological materials, categories relating to spatial and temporal relationships are important, or sets of corresponding artifacts need to be described and organized in relation to each other. These special interests will be accommodated in the final taxonomy, the descriptive. A quick look at the way collectors organize their holdings will reveal a great deal about their interests, and the way that archaeologists organize the artifacts will produce different kinds of information.

If the numismatist is organizing a personal collection, the particular descriptive categories included and their hierarchy of their importance is simply a matter of personal choice. But if the numismatist is organizing material for a museum or other research institution, the choice of descriptive categories and their hierarchy of significance is very important because other people will be using these categories to find material they need to examine. In fact, if collectors need to sell their collections, or some parts of them, they will have a much harder time of it and will get less money if they have not used standard descriptive categories; otherwise the material is simply too difficult to assess, understand, and evaluate.

The power of the choices we make when we organize and compare descriptive categories cannot be overstated. When Thompson was given the task of organizing the material in the Danish National Museum he used the descriptive categories he picked up from his work as a coin collector and applied them to new material. The result, as described in Chapter 1, revealed more information about the museum's holdings than anyone could have foreseen.

The descriptive categories for individual North American coins are not the same as those for Asian or other imported foreign coins, and are certainly different for tokens and medals. We discuss these differences after we present our recommended descriptive categories and explain what should be included in each of them.

## *Important Numismatic Terminology and Descriptive Categories*

The standard numismatic nomenclature used below provides a vocabulary for the material that everyone can understand no matter what their field of interest or expertise. If we combine that vocabulary with the standard descriptive categories developed over time by archaeologists it will be easier to compare materials recovered in different places. The kind of information that can be obtained from the physical examination of any particular numismatic artifact is not always the same, but the way that it is described should be. A short introduction will help clarify important categorical terminology used in descriptions of coins and tokens. Each aspect of a typical description is outlined below and will be developed further, but an introduction to the definitions of some key terminology used in numismatics will probably be helpful, especially for any novices in the field.

### Denomination

The specific denominations of coins that have circulated in North America at different times, whether they were made in North America or elsewhere, were described in Chapter 3 to aid identification. During the last 500 years, a coin's denomination is usually written on the coin itself. The denomination of a coin determines its place in a series of values established for a monetary system. This is easily understood in the case of decimal systems, such as the US dollar where 100 cents = 10 dimes = 1 dollar, and the denominations are cent, dime, and dollar. All of the denominations within that system are defined in relation to the value of a dollar, so that the values of a nickel five-cent

piece, quarter-dollar, and half-dollar are also determined in relation to a dollar and to each other within the system.

Denomination should not be confused with value. Value is a complex idea, and any item's value (either the coin or what it can buy) is defined primarily according to what it can be exchanged for in the marketplace, including labor. A dollar can be reduced in value (and thus buy less) by inflation or other economic or social factors, but the denominations of the coins that represent a portion of that dollar will stay the same in relation to each other. With inflation a dime will be worth less, but there will still be ten dimes to a dollar.


**Figure 8.2.** Ways to write denominations. Small silver coins of the same size are inscribed "half dime" (United States), and "6 cents" (Canada). The Mexican 5 centavos of 1915 has the 6 superimposed over a "c" with a slash, which is the common sign for "cent" or "centavo." The left example of the US copper-nickel, five-cent piece of 1883 is called a "racketeer nickel" because it lacked the word "cents," and racketeers are said to have plated them with gold and passed them off to new immigrants as five-dollar coins. The lack was soon remedied, as seen on the next example, with the word "cents" under the "V" for five. The Canadian coin of 1943 incorporates a pun, with the "V" standing both for "five" and for "Victory" in World War II. The torch also symbolizes victory, and makes the V look a little like a W. The Illinois sales tax token says it is good for "1/4" cents, using the standard cent sign, and the inscription around the rim specifies that it is redeemable in "United States money." Two horse-bits are shown on the token, with the traditional denomination spelled out as "2 bits," another way of saying a quarter.

Tokens normally have an exchange value that will be honored by the entity that authorized its production. That value is often written on it and stated either in terms of the local currency or of a product or service. Tokens are very complex, however, and Chapter 5 provides many examples of interesting and innovative denominations.

## Numismatic Grade

The numismatic description almost always includes a ***grade*** which is determined by use-wear; the highest grade is given to material that looks most like a newly minted piece. Most collectors want to obtain examples that look as close as possible to what they looked like when they were freshly minted. In fact, any physical evidence that the numismatic material was ever used for a secondary purpose, say a hole drilled in it so that it can be used as a pendent, lowers its numismatic value. On the other hand, that same hole may be one of the coin's most important aspects to an archaeologist since it suggests a secondary use. Numismatic analysis often concentrates on how closely the individual piece compares to a perfect specimen, and this is summed up in its numismatic grade. There are a great many sources of information about how to determine the grade of any given coin. This is one of the areas where collaboration between collectors and archaeologists can be of value. Many online sources and any reputable coin shop or coin collector club can be of help in establishing the grades of specific pieces.

The condition of any coin or token is an important factor in determining its numismatic market value and is of interest to anyone who is ever going to buy or sell a piece, whether it is for a personal or institutional collection. Condition is described using both the grade and the color and general appearance of the piece. Coins of the same grade may have very different values.

The market value is of only slightly less interest in the case of pieces that are archaeologically recovered, but for a different reason than the search for perfection. Once pieces are unearthed, their value will determine how much metal detection work and looting activity may follow in the area, so condition is always an issue. That is why guards are sometimes posted at sites where valuable remains have been recovered. While some individuals will claim that the cost of an item needed to fill an empty space in a collection isn't really of interest to them, or that archaeologically recovered coins are "priceless," it is always important to be generally aware of the market value of archaeologically recovered material.

Coins may be described as either hammered (struck by hand) or machine struck or "milled," and how well the piece was made can be part of its grade. The quality of the production, as a reflection of the material conditions surrounding production, can be of interest to archaeologists as well. Although it is tempting to think of numismatic grade and archaeological "condition" as the same thing, there are differences. This is an example of why it is important to be aware of the similarities and differences in the vocabularies of different fields.

## "Provenience" for Numismatists and Archaeologists

The fields of numismatists and archaeology, generally speaking, have different definitions of provenience, and each approach has different reasons for tracking it. To the numismatist, "provenience" is where specimens have been, a list of everyone who is known to have had possession of the piece, and where it was acquired when the ownership changed. The main reason why a numismatist would be interested in knowing where a coin or token came from would be to make sure that the piece was legally obtained and authentic. However, it also adds value to a coin if it belonged to an important person, has been part of a significant collection, or even if it was used to illustrate a book or catalog. Numismatists, especially collectors, and archaeologists usually have different reasons for wanting to know what they know about provenience—different motivations for their epistemology.

Coin dealers and collectors keep track of where they obtained material in order to protect themselves from forgeries and fakes, and keep track of changes in the market. Dealers and shop owners share information with each other and law enforcement so that they can stay aware of problems and trace the origin of forgeries. An example of how this works involves the large number of five-dollar gold pieces that surfaced at coin shops and shows around the time of the first Gulf War. Most of the pieces were

sold to American soldiers serving overseas at prices that were usually just a little lower than the market price. In a few years the number of fake five-dollar gold pieces had grown, and dealers compared notes and shared information about them with each other. A large number of forgeries were discovered to have come from Middle Eastern markets and, while produced in more than one place, bear considerable resemblance to earlier imported forgeries from Lebanon. Information about how to detect the forgeries, as well about the various dealers who were willing to pass them on as genuine, circulated very quickly, and anyone who bought or sold five-dollar gold pieces, or had them in their collections, became careful with their record keeping concerning the origin of their specimens.

The vast majority of collectors do not want to own illegal material for fear of seizure. This is a problem for materials recovered from shipwrecks since some of them can be obtained legally. For that reason companies, such as Odyssey Marine and Kagin's, are very careful to keep track of all of the material that they recover, as well as who they sell it to. However, they also keep excellent records on what they find because shipwreck coins and special hoards have an added value if their provenience can be established.

Also, if either a coin collector or dealer wants to expand their holdings, they need to know where they obtained material from in the past. It isn't uncommon to find collectors who can remember the date, place, and circumstances surrounding the acquisition of material they obtained decades earlier. If we remember that numismatists, as collectors, are interested in the history of their holdings and how the pieces connect them to the past, it is easy to find evidence of the care they take in maintaining records of provenience.


**Figure 8.3.** This coin holder with an 1808 fifty-cent piece has inscriptions with identification and provenience information.

In this example we see several layers of information included in the notations: the name of the first collector who owned the coin, that is the first person who removed it from circulation, and his relationship to a later owner (collected by Rudolf Reidenbach—Mary Welsh Boblett's adopted Grandfather), where and how it was collected (from change that came across the counter at his mill in Ashtabula, Ohio), when it was collected (early twentieth century), and instructions (for resale only to a family member, its third owner). The fact that all of the information was attached to the coin itself indicates its importance to the third owner, who sold it for financial reasons, but secured an agreement from its fourth owner not to resell it to anyone but the third owner. While this level of detail about the history of an individual coin is rarely available, especially attached to the coin, it is not surprising to any numismatist. Collections or parts of collections are often accompanied by notes of one sort or another that contain information about the past history of the various pieces in it—and this applies to private, as well as public, collections and institutional holdings.

The importance of provenience information to numismatists has been recognized and recently marketing of coins has addressed this interest in the various forms of "certificates of ***authentication***." Knowing the history or origin of their possessions is so important to collectors that an entire business of authenticating coins has developed. Authentication comes in a range of type and quality. It is most commonly used with high-grade coins that cannot be graded by novices, in which the genuineness and precise grade of the coin are certified while the coin is placed in a sealed plastic "slab," as described more fully below. It can take the form of photocopied and often completely bogus certificates claiming to be "proof" that a piece is "genuine" where either the certificate or the coin itself is not as claimed. Many sellers use certification as a marketing scheme for run-of-the-mill coins whose genuineness is not in doubt, but whose price substantially exceeds their actual current market value. Examples of this practice can be seen in advertisements on television and in magazines (including several archaeological publications).

Then there are real certifications issued by companies, usually shipwreck salvage operations such as Odyssey Marine, which will contain accurate information on recovered coins, recorded properly with guidance from a numismatic specialist. This type of responsible certification will include true provenience information that allows collectors to own coins while information for researchers is also maintained. This is the realm in which both archaeologist and numismatist can work together effectively. Unfortunately both the coins and the certificates of this type of certification have been forged, so caution is advisable.

There are companies called "third-party grading services" that employ experts who will certify coins as genuine and give them a grade for marketing them to numismatists. Once a grade is given to a coin it must be "slabbed," placed in a sealed plastic container so that the piece cannot be degraded, which would cancel the grade and reduce the price. Occasionally there will be a coin that was part of an important collection or was owned by a famous person that has such information included in its certification or on its slab. This huge enterprise, of authenticating and certifying coins, is not just to protect collectors from buying something that is not as it appears or claims, but also to maintain the record of ownership. It can help collectors become

"stewards" of their collections and makes them feel like a part of the great chain of history.

All of this information has been presented to reinforce the importance of maintaining accurate records of where and when a coin moved from one place or ownership to another. The fact that the vast majority of numismatists do not work in museums or in academics does not mean that they do not keep accurate and comprehensive records of their holdings, even if the records are informally held. Local numismatists are a tremendous resource for historic archaeologists and should be considered as such.

## Dating Numismatic Material: What Numismatists are Looking For

Dating coins is an easier task for numismatists than it is for archaeologists because most of them are only interested in determining the date when a piece was produced, whereas an archaeologist is often looking for both the production date and the date that the artifacts entered the archaeological record. Although most of the coins and even many of the tokens that ever circulated in North America have a date of some kind written on them, dating is not as apparent as it may seem at first glance. It is important to remember that many coins, especially coins that were produced to circulate as bullion coins, such as the Maria Theresa ***Thaler*** used in trade in many countries for 180 years, were produced with the same date on them for many years. Such a date is called a "frozen date." The Massachusetts silver coins of 1652–82 discussed in Chapter 3 all bore the frozen date of 1652.


**Figure 8.4.** The Mexican gold fifty pesos was struck with the frozen date 1947 for several decades.

There are a number of numismatic resources that archaeologists will find helpful for dating recovered numismatic material, and the primary resources include the Krause Publications series, the Standard Catalog of World Coins. Each volume, covering one century and organized by country, denomination, and date, has detailed information on how to date the coins in the volume. There are an increasing number of reliable online guides as well, many represent years of devoted work, without compensation, and are a prime example of possible collaboration. Some of the issues and difficulties associated with the dating process will be addressed later, but it is safe to say that both numismatists and archaeologists are equally concerned with getting the production date right.

There are two different discussions on using coins for dating purposes in two different chapters of this book. This intentional division is intended to emphasize the differences in the way dates are used by archaeologists and numismatists. Numismatists are primarily interested in finding the date of production of a coin, or sometimes the chronological order of the release of different variations of coins produced in large quantity or long series. In either case, it is the production date that is of primary interest, even in cases where the actual production date differs from what is written on the coin. In numismatics the emphasis is on finding the date when specimens were produced. The archaeological methods of dating are centered on the time that a numismatic artifact entered the archaeological record and can only be determined by the archaeological context from which they were recovered. Chapter 9 will have further discussions on how archaeologists use the dates of coins in archaeological analysis.

When working on the analysis of the coins you are describing, it is important to remember that different coins had different average lengths of circulation before they stopped being used. Some coin types go out of use shortly after they were produced, such as coins with a high intrinsic value that were issued shortly before a big jump in metal prices. Others, the Chinese wen being the most notable of them, are known to have been in active use for literally thousands of years. United States nickels stay in circulation longer than cents because of the hardness of the metal.

While dating is one of the most common uses for numismatic evidence it is also one that can introduce problems and present potential pitfalls. When a coin or token is recovered from a secure archaeological context, it can feel like a very solid piece of evidence, like finding the date inscribed on the cornerstone of a building's foundation. But it must always be remembered, as was mentioned earlier, that the date the piece was struck tells us that the place of recovery cannot be younger than the coin. An 1890 dime cannot be found sealed in a foundation of a building that was built in 1889.

## Other Descriptive Categories

There are other descriptive categories that apply to numismatic materials, such as country of origin, mint, material, shape, and size. But they are straightforward, and there is no meaningful difference in the way that archaeologists and numismatists use these terms and the categories they represent.

This section describes the various characteristics and associated vocabulary that are in common use for accurately describing numismatic material (used here to mean anything that circulated as money, whether or not it also had other uses). Fortunately, coins and many tokens have some markings on them that can tell us where and when they were made. Other characteristics, such as the denomination, the composition of the metal, and the general physical condition of the coins and tokens can provide other essential information, but only when reported clearly and unambiguously. Using precise and standard nomenclature for describing numismatic material is essential if the material recovered from one site is to be compared with material recovered at a different time or place.

Even though it may seem like the descriptive categories of "alterations" or "damage" are afterthoughts, which is not the case. Physical changes to numismatic artifacts can often provide important information. Those changes can include anything man-made, from punching a hole in a piece to being cut into pieces with a chisel, as was sometimes the case with coins being reduced to "bits." All descriptive categories are significant.

Standard descriptive categories that can be applied to shell-bead money that will work for archaeologists and numismatists

are still being developed. Archaeologists who have worked up descriptive vocabulary for shell beads of all kinds should be able to assist with the development of such nomenclature.

## How to Accurately Describe the Characteristics of Coins and Tokens

### *Description*

Numismatic artifacts are packed with useful information and are always sought for exhibits and displays concerning the history of places because they reveal so much about the time and location of their origin. By their very nature they are helpful for understanding more about the locality where they were recovered than many other classes of artifact, yet many archaeologists have little training and experience with them (as artifacts). Coins and tokens are like other artifacts and should be treated in the same way: correctly identified, accurately described, analyzed, interpreted in relation to their context, and then appropriately prepared for permanent storage or display.

Comparative and regional studies become more accurate and easier to accomplish if everyone is using established numismatic nomenclature. Numismatic organizations have developed nomenclature for both tokens and coins, and the classification and cataloging procedures described below are derived from them.

### *Describing Characteristics of Non-Asian Coins*

Standard numismatic practices used for describing coins are appropriate for archaeological examples, and using standard descriptive categories for all coins makes it easier to make comparisons with material recovered in other places. The kind of information that can be obtained from the physical examination of any numismatic artifact is not always the same. For example, some coins and tokens have dates on them, and some don't. Others have reign dates instead of a single calendar year or a commemoration date rather than the production date. Although there are variations for each of the types of numismatic material that can be recovered in North America listed below, these are basic categories of information that can be found through examination of the artifact itself.

#### Country of Origin

The information needed for describing this characteristic should be that of the country or place that issued the coin. The name of country of origin is often written on the coin, as is the case with US coins produced by the federal government. Colonial coins may have either the name of the motherland or the name of the colony, state, or province where they were issued. Country names may be included in royal titles, often in Latin, or for Spanish colonial coins only indicated by the mintmark. Coins that do not state a country name are almost always identifiable with the assistance of catalogs. When a state or province name is stated or known, it should be recorded as well.

#### Denomination

The denomination is the stated value of the coin (and sometimes the token) expressed in terms of the standard monetary units being used at the time (e.g., dollar, half-dollar, quarter, etc.). When there is a difference between a standard monetary unit and what is written on the coin, choose what is written on the piece itself. Sometimes obsolete terms are used on coins (i.e., *ocho reales* instead of *un peso* on some postdecimalization Mexican coins, or "d" for "denarius" on British pennies). In such cases the denomination stated on the coin should be used. During the 1870s when currency values were similar in Canada, the United States, and Mexico, roughly the same amount of money was represented by "25 cents" on Canadian coins; "quarter dollar" on US coins; either "25 centavos" or in a few cases "2 reales" on Mexican coins; "2 reales" on many Mexican tokens; and on some US tokens either "2 bits" or a pictorial representation of two horse bits normally recorded by numismatists as "two (bits)."

#### Date

This refers to the date of the production of the coin that can be either an absolute year date or the dates of a reign. While US coins usually have the date of production on the coin, there are many reasons why the date on a coin is not always the year it was made. Whenever possible, the date of production should be listed in addition to the date stated on the coin. If a date is worn off or obliterated by a hole, the date range of the type should be recorded in parentheses, as "(1867–83)" for a shield nickel without rays.

#### Mint

The mintmark, if there is one, will indicate at which of several production sites the coin was made. Mintmarks are typically initials, usually of the name of the city (P for Philadelphia, CC for Carson City, or M for Mexico City) in a subscript that is placed unobtrusively in any suitable location. Not all coins have mintmarks, but if there is no mintmark that is also an indication of the mint where the coin was struck, as can be determined from standard catalogs.

#### Composition

This is the metal or alloy from which the piece is made. Although coins made of gold, silver, and copper are usually easy to identify, coins recovered from archaeological contexts may be damaged by postdepositional processes in ways that make it difficult to determine by visual inspection, and others are made of alloys that may not be identifiable by sight (e.g., 50 percent silver vs. 80 percent silver). It is possible to find the exact metallic composition in catalogs. Clad and plated coins that have one metal on the outside and another metal on the inside were introduced in the mid-twentieth century and can also be identified by catalog research.

#### Condition

There are standard numismatic grades that can be found in detail in many catalogs along with grading instructions for each type. Descriptions of how much text is legible or other indications of wear can be indicated. Types or extent of damage, such as "burned," "badly corroded," or "bent," can be added along with descriptions of the patina. When only a portion of a coin is found, give the approximate percentage of the original coin that remains, such as "65 percent."

#### Alterations

These are modifications, such as perforations, solder spots, loops added, or intentional smashing or hammering. They indicate a change in function, such as being used for decoration or jewelry.

Some coins are counterstamped or have ***assayers' marks*** on them. Other modifications, such as notching or removing reeding from the rim should also be described. All should be noted with the position described, along with size, as in "center hole 2 mm," or "3 mm hole, obverse at 12:00 o'clock" to indicate a hole at the top of the obverse. Depending on the orientation of the obverse to the reverse, a hole at 12:00 o'clock on the obverse may be at 6:00 o'clock or 12:00 o'clock or some other place on the reverse.

### Provenience Information

This category is usually defined at the project or site level according to arbitrary unit and/or site/feature designations. The term "provenience" has different meanings in different disciplines. In numismatic archaeology we use it to refer to the physical location of the material within the excavation or survey area.

### Additional Comments

Comments should include any observations, however minimal, not covered in the information above. The use of standard grading, although intended for another purpose, allows comparisons between individual artifacts and they can even be used in some statistical analysis. Grades were developed and are mainly used to help collectors determine the market price of individual specimens but make it easier to estimate (but only very roughly) how long a piece was in circulation, among other uses relevant to archaeology. Contrary to coin collecting practice, the grade of a coin should be assessed based on the amount of wear at the time the coin was deposited, not based on subsequent corrosion or other damage in the ground. Such damage needs to be noted separately, not calculated as part of the grade.

Descriptions of intentional modifications should be done with care because the vast majority of modifications are an indication of a change in the way the piece was used. For example, a hole in a place near the rim of a coin indicates that someone intended to attach it to something, and this, in turn, indicates a major change in the function of the coin.


**Figure 8.5.** The 1774 Mexican coin has a hole made from the obverse, with excess metal showing around the hole on the reverse. The half dime's hole was made from the reverse, with excess metal around the hole on the obverse.

Even the direction of the punching or drilling used to make a hole in the coin should be noted because the direction of the punching or drilling can indicate which side is intended to be seen by others. Direction of the punching can be described by noting the direction of the "punch," as going from obverse to reverse, or reverse to obverse.

The effects of ***formation processes***, such as burning or the effects of being submerged in saltwater, can and should be entered into the "condition" or "additional comments" descriptive categories. This is also true for the Asian coins and the tokens described below.

## *Describing Characteristics of Asian Coins*

There have been thousands of Asian coins, mainly Chinese wen and Vietnamese dong, recovered in North America. The discussion of their uses, and why there are so many of them, can be found in Chapter 4 and covered in "When Wen Wasn't Money" (Akin 1996:1258–63). None circulated as currency in North America. However, it is appropriate to provide a list of the characteristics of these coins and how they should be described, especially where it differs from the kind of information that is recorded for most non-Asian coins and tokens because every difference is significant. For example, measuring the diameter of individual cast wen and related pieces is required for proper analysis of Asian coins because there are differences in size in these coins. Most of the non-Asian coins are machine struck, so there is normally no difference in the diameter of individual coins. The list of information categories for Asian coins includes the categories listed below.

### Country of Origin

Many cast coins with square holes from Asia look very similar; however, it should not be assumed that coins with Chinese characters are from China. Instructions for identifying the country of origin are provided in Chapter 4. (Please note that the word *Annam* should never be used, though it is found in many catalogs as the place of origin of Vietnamese coins. Most Vietnamese find this traditional Chinese term insulting, as it means "Pacified [or subjugated] South.")

### Mint and the Mint Character (if in Chinese or Manchu)

A list of Chinese mint characters and names are provided in Chapter 4.

### Date

Older Asian coins use reign names instead of single year of production dates. That means that the date is a span of years when a particular emperor was in power. Some reign dates cover a short span of years, while others can cover decades. In the case of longer reigns a specialist may be able to get closer to the date the coin was made using evidence in addition to the reign name. A list of reign names and their transliterations is included in Chapter 4.

### Metal

The alloys used in older cast Chinese and Vietnamese coins vary greatly. Use a description that lists the content with the largest percentage of metal first if possible. If you cannot determine if the coin is brass, bronze, or copper, and you don't have resources for finding out, use "copper alloy" or just "unknown," which has a lower risk of an incorrect determination. If it can be determined, the percentage of zinc can be particularly significant for determining function. If the coin appears to be zinc, it is usually pointless to determine just what other metals are included in the alloy, and the coin should be described as zinc.

### Diameter in Millimeters

This is a meaningful measurement for cast coins that vary in size in ways that are significant for analysis. Machine-struck coins do not need to be measured for diameter as the method of production produces coins of uniform diameter. Cast coins were made in a wide variety of diameters, even for the same

denomination and reign date. It is important to record this significant measurement because the coins were imported for a number of different noncurrency uses, and for each use there were different size preferences or requirements.

### Denomination

Use the proper denomination for each country of origin; wen for Chinese, dong for Vietnamese, and so on. Vietnamese denominations may also include a weight that is stated on the coin, as in "dong of 6 *van*."

### Condition

Condition should be assessed and described using usual numismatic standards. Descriptions should be based on the condition in which the coins entered the ground, even if corrosion or breakage degraded them subsequently. Condition is basically an assessment of the wear that removed metal from the features of the coin before it was deposited, with higher grades indicating less removal of metal through wear. Corrosion or other damage needs to be recorded clearly, in addition to grade. Distinctive patina patterns, iron stains, and holes are often found on these coins and may be the defining characteristic for determining how the coin was used. Because so many cast coins, especially those with a high zinc content, are so fragile, these coins should not be cleaned any more than is required for basic identification before numismatic analysis. The material deposited on them should be identified as well, which may require taking samples of the material adhering to the surface before cleaning.

### Alterations

These are modifications such as holes, solder spots, or loops added, or intentionally smashed, that indicate a change in function, such as being used for decoration or jewelry. Since almost all Asian coins were imported for a secondary use this information is often central to understanding the function of the coins.

### Provenience Information

This category is usually defined at the project or site level according to arbitrary unit and/or site/feature designations.

### Additional Comments

Any observations, however minimal, not included in the information above. If a coin cannot be identified it is still important to indicate if it has been manufactured by being cast or machine struck.

Asian coins were never imported to North America with the intention of using them as money. This means that the functions such a coin served after leaving Asia have to be determined from the context and by examining any alterations made to the piece. The categories of provenience information and alterations are especially important for the analysis of these coins and special care should be given to those aspects of the description.

## *Describing Characteristics of Tokens*

There are many more types of tokens than there are types of coins. Coins are usually produced in very large numbers by a government that needs to serve a large population, while tokens are privately and often locally produced to be used in a smaller area for a shorter period of time. Coins are produced to be used as money, while tokens are produced for a wide range of economic and cultural activities. These are the reasons why identifying and cataloging them can be even more challenging than for coins. However, we can use descriptive categories that are similar to those used for coins, with a few additions and modifications. Tokens recovered from archaeological sites should be described using standard numismatic nomenclature, as is the case with all coins.

### Place of Origin

The place of origin can include a designation of country, state or province, county, or city that is listed on the token or that can be established for the piece. If the place of origin is either unknown or known through a source other than the token itself, that fact should be noted.

### Address

Tokens often have an address on them due to the purposes they are intended to serve. There are many variations of address, a street address, intersection, county, and so on. This important information should be entered completely and exactly as it is written on the piece.

### Business or Organizational Name

This designation indicates who issued the token, often a business or an organization. This information is sometimes inscribed on the piece and tied to the function of the token, as in "Joe's Bar." Sometimes the organizational name can be deduced from the rest of the inscriptions on the token, as is the case with Alcoholics Anonymous sobriety tokens. If the name of the business or organization is found on the piece, use the name as inscribed; otherwise indicate where this information was found.

### Personal Name

A personal name is not always listed, or it may be the same as the business name. This may be a proprietor or a leader of an organization.

### Denomination

The exchange value can be equivalent to an amount of money, either given as equivalent to standard denominations or written in an informal way as in "two bits." It can also be stated in terms of its exchange value, such as "one package of mints" or "good for one drink." Sometimes the exchange value is a discount "25% off next purchase." When used as a chit or marker exchanged for work, the denomination may represent how much work was done as in "one box" or "5 lbs." "Good-for" tokens may carry a denomination in such terms as "one drink," "one sack flour," or even "one stick of powder." Many tokens lack denominations.

### Date

This is often the date the piece is produced. A stated date that is not believed to be the actual date the token was struck should be stated in quotes, such as "'1776' probably 1876" or "'1920' actually 1970." An estimated date not shown on the token, or a missing date supplied from a reference should be put in parentheses, as "(ca. 1920–30)" or "(1934)."

### Material

Tokens are made of a wide variety of materials, metallic alloys, wood, plastic, and composition materials like Masonite. Metallic composition should contain the alloy or fineness if known. The color of anodized aluminum, the printing color on wooden nickels, and the background color and printed lettering on tokens made of plastic should be listed.

### Measurements

Shape and diameter should always be described in millimeters. For hexagonal or octagonal pieces, measure between the facing sides; for an irregular piece measure the diameter of a circle in which the piece fits. And for elongated, oval tokens measure between the far ends and the near sides. Thickness is rarely important for tokens, although some are found in thick and thin varieties. Thickness should be recorded for unidentified medals.

### Inscriptions

The entire text as used on the token should be given in full, using capitals or lowercase letters as given on the token. Start on the obverse, divide lines with slashes and then go on to the reverse, with a double slash between the two sides. Description of images and devices should be incorporated into the text. For example: RANCHEROS VISITADORES/(vaquero)/L A R S CO// GOOD FOR/50¢/IN TRADE. (The small initials at the bottom of the obverse are those of the Los Angeles Rubber Stamp Company.)


**Figure 8.6.** This Rancheros Visitadores token from Santa Barbara, California, was first used around 1930. The tiny initials of the maker, L.A. Rubber Stamp Company, are under the horse. They must be included in the description for it to be complete.

### Condition

Condition should be assessed and described using usual numismatic standards. Condition (grade) should be described based on the condition in which the item entered the ground, with any subsequent damage by corrosion or excavation noted separately. Most archaeologically recovered pieces will be in the "very fine" to "poor" range judging by the amount of wear on the inscriptions and devices. Any specific damage should be described as a scratch, dig, corrosion, hole, or other apparent damage specified by obverse or reverse and by o'clock coordinates for position.

### Alterations

These are modifications such as perforations, solder spots, or loops added, or intentionally smashing or hammering, that indicate a change in function such as being used for decoration or jewelry. With tokens, some alterations indicate that the token has been cancelled, or a store has changed owners. Some tokens are counterstamped with letters, numbers or other devices. Other modifications, such as notching or removing reeding from the rim should also be described. All should be noted with the position described, along with size, as in "center hole 2 mm," or "3 mm hole obverse at 12:00 o'clock" to indicate a hole at the top of the obverse. Depending on the orientation of the obverse to the reverse, a hole at 12:00 o'clock on the obverse may be at 6:00 o'clock or 12:00 o'clock or some other place on the reverse.

### Provenience Information

This category is usually defined at the project or site level according to arbitrary unit and/or site/feature designations.

## *Attribution of Tokens to Places*

While virtually all coins are described and even numbered in easily available catalogs, the same cannot be said for tokens. Well under half of token types for the United States and an even smaller percentage of Mexican tokens are currently listed in any catalog. While efforts are being made to create lists of tokens online, it is a massive and uneven effort; however, advances along these lines are developing rapidly and the Internet will probably be the best source of information for local tokens before long. If there are token enthusiasts in the region where the tokens are recovered, it may be possible to find similar examples online.

Tokens may be produced and used in a region, state, province, city, town, school district, transportation district, and so on; so a few precautions are needed when describing where they are from. Try to determine if the location is a town or county when the name can apply to either. Sometimes a pair of alternatives must be given, such as "Canada or the United States" or "Great Britain or Canada." If no address is known, but geocoordinates can be determined, use those.

## *Describing the Location of Curated Material*

Once any artifact has been recovered, cleaned, and cataloged, it is sometimes put on display. But typically they are cataloged and placed in an appropriate storage facility. Institutional numismatic collections normally have only a portion of their holdings in publically accessible places, and the same thing can be said about archaeological artifacts. Researchers will need to refer to inventories and catalogs in order to locate material already processed, and they will probably need to do searches on key words, dates, artifact descriptions, and the like. Important excavations done under the supervision of a formal institution or museum will have the materials stored in the institution's own climate-controlled facility. In other situations, where there may be a lack of appropriate storage space near the laboratories and processing facilities, or where budgetary constraints require it, storage may be miles away. Records of the holdings and any references and reports using them should include the ***curation*** facility where the items are stored to make it easier to locate the material in the future. This should be routine, but there are many reasons why it doesn't happen, and most of them have to do with money. However, the easier it is for researchers to find material in collections, the more accessible recovered material and important collections

become, the easier it will be to generate financial support for maintaining the storage facilities in the future, especially for those supported by public funding.

The following information will enable anyone who visits or uses the material after it has been curated to understand the full context in which the item was found, and help later scholars find it in case reexamination is needed. In the United States, state-issued trinomials are used in the case of material recovered from an archaeological site, and in Canada a parallel system of Borden location identification numbers are used. Artifacts that have already been curated and are in storage or on display require descriptions of where they can be found. Be sure that the following information is included: 1) name of the site or collection (trinomial designations where applicable); 2) curating institution or location of the material; 3) date of the examination of the material; 4) any related site reports, images, or other supplementary materials; and 5) excavation catalog number or other designation used in the original field notes.



## Production Dates, Use-life Dates, and Date of Loss

### *Dates and Dating Systems*

Numismatists and archaeologists use dating information in different ways and for different reasons. It is helpful and interesting to see all of the information that can be derived from dates found on coins, or inferences that can be abstracted from the contextual dating of archaeological material. There are two main ways that dating information is used. For numismatists, the production date, usually found on coins is usually of most interest. The methods used for finding out when a coin, and sometimes a token, was produced, how old it is, are discussed below.

Because archaeologists need both the production date and the date that the material entered the archaeological record, and sometimes even the date of some other event that can be traced to the artifact's use-life, dating becomes more complicated. Some aspects of dating, those associated primarily with production dates, are discussed below. Examples of how other time-sensitive information is derived will be discussed more fully in the chapters on archaeological methods.

### *Coins Move through Time and Space*

Determining the age of an artifact, or the site it is associated with, is critical for understanding cultural process and change. To make the most use of a coin as a diagnostic artifact, it is necessary to obtain at least two dates for the coin: the date it was made and the date it entered the archaeological record.

Unlike most of the material archaeologists work with, coins were not usually intentionally discarded by their owners. Also, coins were subject to much more recycling than most other artifacts. Coins may have a long life, or they may disappear into a hoard for a long time only to resurface in perfect condition. In China, coins that had been stored for centuries were later returned to circulation. Coins also have secondary functions, especially as jewelry or religious objects, even as curated items in private or public collections, which are functions that keep coins in nonmonetary circulation for considerable time periods.

### *Dating Coins*

Dating a coin is, of course, easiest when the date is written on the coin. Often, especially in modern times, coins bear the date of the year they were minted; but there are other forms of date inscriptions that may appear on coins. It is usually necessary to determine the date of a coins' production before it can be used for dating a site or for any other analysis using the coin as data.

#### Absolute Dating

It is easiest to produce an absolute date for the production of a coin when some sort of calendrical date is written on the coin. This was, thankfully, a common practice, but many different calendar systems were used. The most common calendrical system applicable to the coins and tokens likely to be recovered in North America is the Christian era. Once it was established, calendar dates were based on the year in which Christians calculate Jesus of Nazareth was born; a European minted coin with the date 1492 would equate to 1,492 years since the birth of Jesus. Christian era dates are based on a solar calendar and are usually indicated on coins by the year.

The other, less familiar, dating system that is used on coins recovered in North America is the Chinese system of reign dates that was used on Chinese, Vietnamese, and some other Asian coins. Reign dates tell us a coin was produced during the reign of a secular or religious leader. The vast majority of Chinese coins recovered in North America are wen, and familiar to most people as the Chinese coins with square holes. The vast majority of wen found in North America are from the Qing dynasty (1644–1911) and all carry four Chinese characters on the obverse. The right and left characters can be translated into English as "circulating currency" or "current coin," and the top and bottom characters give the *nian hao*, or "reign name." In most situations it is difficult or even impossible to identify which single year, during the span of the reign, was the year a particular coin was made. Sometimes it isn't possible to get very close, especially in the case of very long reigns.

Coins with regnal year dates can yield an absolute year of production if they tell us, as in the case of current Japanese coins, what year of the reign the coin was minted in. If you know the date an emperor gained the throne, you can tell what year the coin was made. Very few such coins, and those usually from the Southern Song dynasty of China, are found in North America.

Care has to be taken to ensure that the date on the coin indicates the year of production. Occasionally coins are produced to commemorate an event and will carry the date of the commemorated event rather than the production date. Some coins have been struck with "frozen dates" over periods as long as a century, especially in India. Other coins, such as the first New England issues, were produced with fictitious dates for a variety of legal and political reasons.

#### Relative Dating Using Changes in Style and Design

Both numismatists and archaeologists have developed relative dating techniques for different coins and coin series. Relative dating can provide dates that are otherwise difficult to obtain. For example, relative dating methods can be used to determine production dates or the date of entry into the archaeological record of coins that are so worn that the dates cannot be read. The methods are the same as those most commonly found in

Europe, which pre-date the convention of putting the production date on coins. The most common method of developing a relative chronology is on the basis of style. Conventional designs on coins are subject to shifts over time, and these are used as the basis of typologies in much the same way as stylistic typologies, such as those that archaeologists establish for ceramic designs.

For example, heavily worn US large cents minted in the eighteenth and nineteenth centuries lacking dates may be found archaeologically. Changing designs on the obverse side of the coin can be used to reconstruct the date range of a heavily worn cent. In 1793, the large cent had a right facing woman's head with flowing hair and a chain motif on the reverse. In the same year, the mint released a flowing hair cent with a wreath motif on the reverse side of the coin.


**Figure 8.7.** Liberty cap cent with wreath reverse.

From 1793 through 1796, the obverse design was changed to a right facing woman with less flowing hair and a cap behind her head. These Liberty cap cents had wreath motifs on the reverse.


**Figure 8.8.** Draped bust cent.

The Draped bust cent was minted from 1796 through 1807; the right facing woman has a more ordered hair style with her blouse draped over her bosom.


**Figure 8.9.** Classic head cent.

The Classic head cent was minted from 1808 to 1814 with the woman facing left; she wears a distinctive headband with the word LIBERTY.


**Figure 8.10.** Coronet head cent.

The Coronet cent was minted from 1816 through 1839. The head is smaller but still left facing with her hair pulled back into a distinctive bun shape.


**Figure 8.11.** Braided hair cent with small head.

The Braided hair cent was minted from 1840 through 1857; the bun was braided. Through 1842 the "small head" variety was used.


**Figure 8.12.** Braided hair cent with larger head.

Starting in 1843 the "large head" variety of the Braided hair cent was produced. This variety was used until the minting of large cents ended in 1857.

Other heavily worn coins can be dated in this fashion because the available numismatic literature for coins likely to be found in North America is well illustrated, and worn design motifs, as well as coin size and metal composition, provide enough data points to enable such dating.

It then becomes the task of the archaeologist to fit the relative chronology into a larger context. That is, to take the similar group of coins that has been placed into chronological order and fit it into a larger and longer series of coins drawn from the entire region. This type of dating is usually used for very large and/or long series of coins, such as US cents.

### Dating with Die Links

Using die links for dating is a technique that was developed and widely used in Europe and Asia, but occasionally it can be applied elsewhere. Before the introduction of machine

struck coins, all coins were produced either by casting or by placing a prepared coin blank (flan or ***planchet***) between two engraved dies that were hammered together. In the case of the struck coinage, the obverse die (pile) was set in an anvil, and the reverse die (trussel) was a hand held punch that received the blow.

Reverse dies wore out more quickly and were more subject to breakage than the obverse dies as a result of the direct blows from the hammer. An obverse die tended to last about as long as three reverse dies. Because the dies were hand engraved, each one varied in some small detail from the others, and so it was possible to produce a series of three coins that would each share the same obverse but have slightly different reverses. Only rarely did it happen that the obverse wore out at exactly the same time as the reverse, so some coins with the same reverse have different obverses. If enough examples of a coin are collected, it is possible to arrange them chronologically by reconstructing the die links, that is by reconstructing the order of the use of different obverse and reverse dies by comparing the coins. If even one coin of the series can be dated by some other method (like archaeological context), the relative dates of the other types can be established. In places where large hoards have been recovered, it has been possible to reconstruct an entire series. Because cob coins from Spanish American mints often lack dates, die link work has been done by numismatists to unravel the production dates, or at least relative dates, of some coins in this series.

Looking at the US large cent series from 1793 through 1857, many die pair "varieties" are collected by numismatists, and several of these are good time markers. For example, the obverse of the 1817 Coronet cent comes in two varieties—thirteen stars and fifteen stars. The normal motif is thirteen stars; a cent with fifteen stars dates the coin to 1817.

## *Features and Characteristics of Assemblages and Hoards*

Hoards are actually a subset of what archaeologists call assemblages, and the difference is determined by the intention or lack of intention involved in getting the coins to the place where they were recovered by archaeologists. While both assemblages and hoards are the material remains of activities that culminated with many coins entering the archaeological record together, the way that the coins got into the ground is key to how we differentiate the terms. Hoards were intentionally placed in hiding in a discrete group, often in a container, and sometimes mixed with other valuables. Assemblages are any group of coins that end up together, in the place where they were recovered, because of some human activity or behavior. A hoard is always an assemblage, but not all assemblages are hoards. The significance of this difference will become clear as examples are presented later.

Traditionally, hoards are made up of material that has been intentionally buried in the ground, but the term has also been used to refer to material hidden under floorboards, between walls, and similar hiding places, sometimes even hidden deep in caves. Most of the time there is some evidence of a container that may be in some state of disrepair, and often the container and the hiding place can tell us what kind of hoard has been uncovered.

### Typologies of Hoards

The late Richard Doty, who was the Director of the National History Museum's National Numismatic Collection, had a tight numismatic definition for hoards. According to Doty (1982:167–68), "a hoard is a group of coins which was lost or hidden as a group." From the perspective of North American archaeology, hoards are the material reflection of social conditions and the need to secure money at times and in places where there were no reliable banks. Intentional hoarding falls into several very general categories, and in many cases it is a simple matter to determine which type of hoard has been uncovered by checking for certain characteristics of the coins or their recovery context. Unintentional hoards are the result of loss or habitual behavior that was not the result of conscious decisions or action.

The categories used here are an archaeologist's adaptation of the types developed by Doty and Philip Grierson, from whom Doty reported he drew his categories. Some of the names for the types of categories have been changed to focus on the behavior behind the creation of the hoard rather than the type of place where they were found. This difference in typologies is only to be expected when the different goals of numismatics and archaeology are considered and is in no way intended to criticize other typologies used by numismatists, as they may be useful for some purposes. The important thing to remember is that archaeologists see hoards and other finds as a material reflection of human beliefs and related behavior.

Although there are other typologies for hoards, most of them came into use in Europe or Asia. North America has had different social and economic conditions influencing the formation of hoards. The following typology is suggested for North American hoards and assemblages, and each category has its own set of characteristics and distributions. Later the characteristics of each type of hoard are detailed, with some discussion of the expected contextual clues that can often be associated with them as a guide to analysis. The first three categories of this typology are hoards in the more traditional descriptive categories. The final four categories are assemblages that share many characteristics of hoards but were either deposited in the same place over a long time or were formed as assemblages without human intention: 1) contraband; 2) savings/banking; 3) emergency; 4) accidental loss; 5) manipulating luck; 6) demonetized money; and 7) burial practices.

#### *Contraband Hoards*

Contraband hoards are those in which the hoard is composed of material that was associated with illegal activities. Such hoards would often be buried or otherwise hidden to protect the owners from prosecution. While it is fun to imagine lost hoards of coins from stagecoach or bank robberies, those hoards aren't recovered very often and may go unreported if found. The most common kind of contraband hoard consists of material related to gambling, especially in places where gambling was illegal. Hiding gambling equipment, including the money won in illegal card and table games, was common in most of North America. The prevailing social norms were somewhat hypocritical, with laws on the books and movements preaching the moral decay associated with gambling on the one hand, and a legal system that selectively prosecuted on the other. People who were involved in such activities often

felt it was wisest to hide evidence of their connection to such activities.

One such example is the hoard, one of the largest of its type, of Chinese and Vietnamese coins recovered from the San Bernardino, California, Chinatown site. This hoard was made up of coins that were not actually being used as money, but were part of the gaming equipment, and were interpreted as buried for safekeeping since the legal status of gaming activities was, at best, ambiguous.

Other examples of contraband hoards might include the "take" from a robbery, whether it was a large amount of gold or silver destined to be distributed as payroll in remote locations, the cash taken from a store till, or home burglary. Contraband hoards can be found in any context, dating from any time period, but areas with a more lawless character (such as frontiers) can probably be expected to contain a relatively higher number of examples.

### *Safekeeping or Savings Hoards*

Safekeeping or savings hoards are among the terms that have been commonly used to describe hoards containing material that was being set aside in some way. Those terms are, however, less specific and descriptive than the one used by Michael Schiffer for the same practices. Schiffer referred to them as "banking caches" (Schiffer 1987:79). Referring to material that has been placed in a secret location because of a lack of formal banking institutions as a safekeeping hoard is a more meaningful and specific way to describe it than to call it a savings hoard. Safekeeping hoard not only describes the fact that a particular hoard was created and hidden because money was being set aside and saved, but it also implies that there were no easily available or trusted banks in the area.

Safekeeping/savings hoards can sometimes provide insights into the general condition of circulating currency when they were placed in the ground or other secure place. Because coins were often added and sometimes removed from such hoards, the coins found in it often show the relative amounts of various denominations in circulation at the time. If the hoard is large enough it is also possible to see how much wear each denomination suffered, which in turn reflects the amount of time a coin tended to stay in circulation. However, North American hoards are seldom large enough to allow much statistical analysis.

### *Emergency Hoards*

Emergency hoards consist of material buried because of an impending danger, such as the imminent arrival of invading troops. Emergency hoards often contain other material of value, such as jewelry, small religious objects, or dishes or flatware made of silver or gold plate. The amount and type of coinage found in such hoards is usually random and specific to the circumstances immediately preceding the stashing away of goods. Because they are often hastily gathered, these hoards can sometimes have a chaotic mixture of seemingly unrelated objects.

These typological categories have some overlap, and it can be difficult to differentiate between them. It can also be difficult to determine if a small clutch of coins was buried under a tree for a long time to keep it safe from people who shouldn't know about it, or if it was set aside as someone's homemade "vault" that was visited often to make "deposits" or "withdrawals."

An example of the difficulty of placing hoards in specific categories made headlines in 2013 when a hoard of US gold coins was recovered from an undisclosed location in California's Gold Country. Dubbed the "The Saddle Ridge Hoard Treasure: The Greatest Buried Treasure Find in U.S. History" (Kagin and McCarthy 2014) the hoard consisted of a total of eight rusty cans filled with five-dollar, ten-dollar, and twenty-dollar US coins, some of them rare or previously unrecorded in their condition. According to the press releases and a promotional booklet printed prior to the sale of the coins, this was a "safekeeping" hoard likely set aside by a hardworking miner living in the area who needed a place to store his accumulated wealth in a lawless area without safe banking resources. But those with vigorous imaginations have suggested that the coins were stolen; perhaps it was a payroll that never got to its intended destination, or maybe it was in transit from one bank to another? We will come back to discuss the kind of evidence that both numismatists and archaeologists use to analyze such a hoard in the next chapter.

Whatever particular situation is being reviewed or analyzed, discussing what material belongs in which descriptive category can be more productive if an agreed-upon typology and nomenclature is used. In the case of the Saddle Ridge Hoard, was the material a "contraband" or "safekeeping" hoard, and what are the implications of using one category or the other?

## Assemblages that have the Appearance of Hoards

### *Unintentional or Accidental Loss Assemblages*

Unintentional or accidental loss assemblages are often referred to as hoards and can include anything from the treasure chest of a sunken pirate ship to a purse dropped in a muddy lake or lost in the bottom of a gully. Because this type of material was suddenly and unexpectedly separated from its owner, it may reveal information about activities in the past that might not show up anywhere else. Shipwreck finds can produce evidence of smuggling when they contain coins, or the metal for producing coins, that is not recorded in ship's manifests or authorized for use in a particular location. The category of "unintentional loss" is used to differentiate the kind of loss that is the result of events that happened at one particular point in time, in conjunction with a ship sinking or a coin purse falling into the mud. There is another kind of unintentional loss that can produce a substantial group of coins that are found together, in an assemblage, rather than a hoard.

Many historical wooden structures, tent platforms, and even wooden sidewalks and boardwalks, had gaps between the floorboards. A dropped coin that then fell between the cracks can contribute to an accumulation of coins that grows into an assemblage. This phenomenon occurs most often in places where the construction is rough and the boards poorly finished, and where there are no basements or access to the space under the floor. Coupled with a lack of electrical or other source of bright lighting, and you have the elements for the accumulation of assemblages that do not constitute hoards. The reason this kind of deposit would not be a hoard is because the coins were added on different occasions by different people, and the circumstances leading to each coin falling through the boards were different.

Nobody intentionally loses a coin any more than they lose an entire coin purse, but there is a clear distinction between an

assemblage and a hoard. The dropping of the coin purse is an accident and constitutes a single event on a single day. Over time the purse gets covered with dirt or mud; eventually the leather or silk deteriorates, and when the coins are found, they are in a small pile that may remain tightly grouped in an accidental loss hoard. If a number of different people each drop a coin while walking on a wooden boardwalk over a long period of time, and the coins roll and fall into a gap in the boards, a random assemblage of coins has developed. In this example there is no intended difference in behavior; the difference is a sustained period of loss versus a one-time event, and a variety of persons versus a single individual.

The field of underwater archaeology is where the greatest number of hoards that capture the public's imagination are found and reported. Because the value of the coins and bullion that was carried and subsequently lost at sea was so enormous, it should come as no surprise that this is an arena where the debates about "who owns the past" get very hostile and uncompromising. New technology has resulted in new legislation, and many archaeologists call for something like Britain's Treasure Trove laws to protect the information tied up in the increasing numbers of finds.

### *Manipulating Luck*

Manipulating Luck accumulations are traditionally described as "***votive offering***" deposits made in sacred places to accompany prayers or wishes. These accumulations of coins were, and continue to be located in springs, pools of water, and fountains; although in the more secular modern world the location may be traditional but not necessarily religious or sacred. There are very few North American examples of this type of assemblage that would be described as specifically religious. Rather, coins are used to make a wish for "good luck" with the deposit of small coins in wishing wells, fountains, creeks, and small bodies of water.

The habit of depositing items of value into a sacred pool is often described or thought of as something like the deposits in Bath, England, or the sacred cenotes of Central America, where generation after generation made offerings, or "sacrifices" of coins, jewels, small precious items, and even occasionally people in hopes of having their prayers answered by a higher power. The practice continues today in a modified form that most people would recognize as a "wishing well" of some kind. Schiffer uses the term "ritual cache" to refer to this kind of deposit (Schiffer 1987:79). The accumulation of similar assemblages may be observed today, among other places, in the fountains of several California missions where the practice of throwing coins in water still continues.

Since some time in the mid-twentieth century cents have been the most commonly used coins for "making a wish" indicating that whoever is doing so does not have a lot invested in the outcome of the wish. More recently nickels and other small change has been found in fountains. The fountains of Las Vegas, however, receive higher value coins and gaming chips suggesting that perhaps the "offering" is more serious because the need for luck is more substantial.

The switch to zinc cents that deteriorate and can stain pools and fountains has caused some places of business to put up signs asking people not to throw coins in their fountains.


**Figure 8.13.** The adoption of the copper-plated zinc cent, harmful to fish and amphibians, led officials at Muir Woods State Park in California to post a sign on a bridge instructing visitors not to throw coins into the stream.

Other places, such as Muir Woods State Park in California, have posted signs on pedestrian bridges where they cross over small creeks, asking people not to toss coins into the creek because the zinc that leaches from the coins is detrimental to wildlife. The widespread and longtime practice of throwing "pennies" in "wishing wells" suggests that there is probably some archaeological evidence of the practice in North America that has not yet been formally reported.

When two of the authors were at Ft. Ross State Park in California in 1990, where the old Russian outpost has been restored, the park rangers reported that the well in the center of the grounds was constantly being filled with coins. The US money was collected and used to buy supplies for restoration, and the foreign money was kept in the office until they could find someone who had the knowledge and time to identify them and prepare them for a display somewhere on the grounds.

### *Demonetized Money*

Demonetized money and hoards of greatly devalued low-denomination coins form a separate category of assemblage. While the United States does not declare any of its coinage as unredeemable, the same cannot be said for Mexican coins, as well as the coinage of much of the world. Some kind of economic or social upheaval is usually behind the recalls of circulating currency, and some small-value coins become virtually worthless or disappear entirely in a relatively short period of time. Periods of inflation or changes in government have resulted in accumulations of coins that are simply not worth the trouble to exchange. However people often cannot bring themselves to discard coins that are of too little value to carry on their persons, and they leave them in jars, boxes, and cabinet drawers and often give them to children to play with. These conditions and behaviors can leave material remains in ethnographic and archaeological records. The process of the development of this type of hoard is familiar to any American who picks the Lincoln cents out of purse or pocket at the end of the day and deposits them in a jar.

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CHAPTER 9

# The Archaeologist's Perspective


## Introduction: The Archaeologist's Approach to Numismatic Materials

The similarities and differences in the ways that archaeologists and numismatists approach numismatic material were introduced in Chapter 8, and that comparison is continued here. Most nonprofessional numismatists are primarily collectors who share the perspectives, methods, and attitudes common to collectors of other types of material but are focused on coins, tokens, and a few other related objects. The primary interest of an archaeologist is how numismatic artifacts work as part of the material culture of a larger society or one or more communities. They use this material and its context to tease out information about human behavior and the economic and social life of the communities.

Archaeologists use the objects that are found underground or underwater to supplement and expand what can be learned about the past through documentary evidence. In North America, archaeological evidence is especially crucial for understanding the past, as almost all the local people did not keep written records at the time of contact, whenever that occurred at any particular location. (Maya and Aztec writing, limited to elites, are the only known exceptions on the continent.) For various reasons, most European newcomers kept few written records themselves until well after contact. In order to learn about the past, to gather information about human behavior and the economic and social life of communities, archaeologists have to learn to "read" objects instead.

### *Finding Meaning in Recovered Numismatic Artifacts*

What do we mean by "finding meaning" in artifacts, and more importantly what do we mean when we say that we are going to do it scientifically? The theoretical underpinnings of what is known as the material culture approach, which allows us to accurately and meaningfully analyze artifacts, are introduced in this chapter. Analytical methods using context, association, and the patterned distribution of artifacts over space and time will be described, especially in relation to recovered assemblages of numismatic artifacts. Concepts such as use-life and formation processes as used in North America are introduced and compared to the way these concepts are expressed in other places. In addition, we demonstrate how ethnographic studies and analogy can be used to recognize and understand previously unrecognized situations, as was the case when it was discovered the many ways that certain imported coins changed function when they stopped circulating as currency. In the end it should be clear how archaeologists find meaning in numismatic artifacts, and how, in turn, the artifacts can help us understand the places and times where they were used.

### *Scientific Analysis of Numismatic Artifacts*

Analysis is a word with many complex meanings. The analysis of any numismatic artifact or assemblage of coins and tokens is only complete when: 1) the material has been *identified* and *described* using standard numismatic nomenclature; 2) the *function* of the material is understood, including the way it was used by people and their societies; 3) the *contexts* of the pieces have been recorded, that is the physical and social relationships to other recovered artifacts and their position in the archaeological deposit; 4) the use-life of the numismatic artifacts is understood, including any reusing and repurposing; 5) the *meaning* of the numismatic material to those who used it is clear; and 6) the *site formation processes* that acted upon the material have been identified.

It can be difficult to find answers to all of the questions we have about a single artifact, or small numbers of tokens or coins, or to characterize numismatic material at the time it is recovered and first analyzed. And it is easy to see why some of the things we would like to know about coins (e.g., where they were accepted and traded) can only be learned through regional studies conducted over a long period of time. Information about the past is slowly developed under most circumstances, but the things we learn about the past from relatively rare North American numismatic evidence develops especially slowly. Newer methods to integrate numismatic information with other evidence help develop a more complete picture of

life in the past. These newer methods rely on obtaining a correct understanding of numismatic artifacts as material culture, along with an understanding of the physical and social formation processes that act upon it. We demonstrate that there are a great many things that we can learn from these little bundles of symbols.

### Types of Numismatic Evidence

Coins and tokens offer many different types of evidence beyond the information that dating can sometimes provide, and some of those general categories of evidence are listed below. They can add to our understanding of a wide range of topics and relationships. And even though this is a partial list, it is a good place to begin learning just how archaeologists use coins as evidence. What we can learn from numismatic evidence grows over time in relationship to the field of anthropology in which it is embedded. For example, gender studies are as new to numismatics as they are to anthropology, while dating techniques are as old as the field itself. We anticipate this list will expand, but for now archaeologists regularly use numismatic evidence to: 1) date numismatic materials and other objects found in association with them; 2) date sites and different areas within complex sites; 3) explain how economies worked and changed over time; 4) explore relationships between the economy and political organization; 5) reveal the impact of trade on social development; 6) understand the access to money and its relationship to class and gender; and 7) demonstrate how beliefs, values, and worldview are related to wealth.

There is a great deal to learn from tokens and coins, and because they often come with the production date stamped right on them, they are especially attractive to anyone wanting to date events in the past. But dates can be deceiving because coins circulate for a long time between the day they are produced and the day they enter the archaeological record. Also, because they are produced as little packets of symbolic meaning there is always the possibility their symbolism or the significance of finding them in a particular place can be misunderstood. How do we ensure that what is said about a piece of numismatic evidence is as accurate as possible? The same way we test all types of data, by using the scientific method.

### The Scientific Method Yields the Best Results

It is perfectly reasonable to ask if we can we really know the past. It is easy to produce convincing-sounding "explanations" of what happened in the past, but it is ultimately more satisfying to produce scientifically sound information using scientific methods. Scientific methodology never promises to produce absolutely accurate representations of any phenomenon, but it does allow us to get ever closer to an accurate representation of the past.

The generation of hypotheses (possible explanations) of how the coins and tokens were used, among other things, is the initial step in a scientific study. By using what is known about the past and human behavior it is possible to develop scenarios or possible alternative stories about what happened in the past and what role various objects played in that history. Testing our theories and explanations of what happened in the past is what makes the difference between science and storytelling. Every scientific discipline uses different tests and different methods for testing their hypotheses, depending on the material being studied. Using scientific methods will allow us to enrich our understanding of the past without slipping into storytelling.

Ultimately we hope to understand the structure of society, the interrelations between aspects of social life, and as much as possible, the general laws and motive forces of social development, by using scientific methods for testing our understanding of how the material culture of a society was produced and used.

## *The Material Culture Approach*

Our ability to understand the past is shaped by our recognition that human society consists of a complex of processes. All aspects of human society come into being, change, and pass away not as separate individual units, but in essential relation and interconnection with other aspects of society and the environment. These social aspects, or cultural systems, cannot be understood separately, but only through their relations and interconnections with the rest of the social and natural environment. Analysis of cultural systems, including economic systems, is always challenging because our understanding of the past is partial and constantly changing.

If we recognize that a society's institutions and cultural development arise on the basis of the material life of society, then we can begin to understand, through the examination of material remains, something about these same social relations as they existed in the past. The challenge for the archaeologist is to ensure that our interpretation of the material remains reflects the actual social processes that produced it.

Coins and tokens can be viewed as a kind of economic tool, almost universally present in monetized societies, which in turn must be seen in the context of being a part of the material culture of the larger society. As with all artifacts, numismatic materials are subject to changing views about what they are, what their use signifies, and how they may be used, as originally planned, and in unintended ways.

Archaeologically recovered coins and tokens, like all other artifacts, are reflections of the time and place in which they were made and used. Coins and tokens are often reused, repurposed, and adapted to changes in the culture in which they are embedded, but they always reflect what is going on around them if only we can learn to understand them. The place where they were found, their archaeological context, can tell us even more.

To use a familiar example, if we understand the process of making clay pots in the past, we can see by examining the archaeological record when the shape and design of the pots changed by looking at a selection of pots recovered in the past. We want to know why the changes occurred and, if possible, how the change in the shape of the pots reflects changes in the community where they were made or the knowledge and beliefs of the people who made them. A list of questions about the change in pots is developed. For each question about why the pots changed, some hypotheses are developed, that is alternative possible explanations for the changes in the pots. Each hypothesis is tested to see which is closest to what happened to cause the potters to change pot shapes. Did the source of the community's clay change, causing a change in the properties of the clay and how it could be worked? This possibility can be tested by analyzing the local clay sources and conducting some experimental archaeology to see how

the clays make a difference in the shape and properties of things made from them. Did someone see a pretty shape used in another location and copy it? This possibility can be tested by tracing the different styles and designs used in different places to see how those changes correlate with other cultural changes. Was it a combination of factors that caused a change in the process of making a pot? Whatever the answers to the hypothetical questions, we understand that the changes in the society, whether it is the discovery of new materials and techniques, or the introduction of new styles due to contact with new people, are reflected in the pots.

While the artifacts used in the example above are different from numismatic material, the process of looking at previously recovered examples, developing questions and possible alternative answers to them, and finally testing those possible answers or explanations, should be familiar to anyone who has taken high school science classes. The process is familiar even to nonarchaeologists because all types of material culture, whether pots or pennies, are reflections of the technology, worldview, and beliefs of the culture to which they belong.

Testing our theories about the role of the numismatic artifacts in the larger society is often called the final step in analysis, but it really isn't. Writing up the information gleaned from the material and sharing it with others is the final step. It is also a step that can be accomplished more easily and accurately when everyone is using the same descriptive vocabulary, categories, and classification system.

## *Identification and Classification: Where Analysis Begins*

The importance of naming artifacts, as well as placing them in meaningful descriptive categories (taxonomies) is revisited here briefly because of its importance to both numismatists and archaeologists. We can turn to the Bible and find that the first task assigned to Adam in the Garden of Eden was naming the plants and animals, and the importance of names is echoed in traditional stories from around the world. Humans find a deep satisfaction in naming and ordering the things in the world around them, that is part of the pleasure in coin collecting. The archaeologist's work benefits from having properly described and classified material as well. The ability to compare similar finds from similar contexts at different locations is just one of the benefits of carefully classifying the material into taxonomies that use the same criteria and vocabulary.

### Problems Associated with Classifying and Cataloging Recovered Coins and Tokens

When artifacts are freshly removed from the ground and processed in a laboratory they are identified, described, classified, and cataloged for analysis. After the initial identification is made, the artifacts are classified and entered into an inventory or catalog of the materials recovered at the site. The information included in these entries is used immediately, as data that contributes to the site or survey report. Sometimes the evidence guides future work at the site where it was found or helps the development of new research questions.

Because they are relatively rare in North American archaeological sites, numismatic artifacts may be discussed in the report, even if little is known about them or why they were there. In fact, for that very reason it is important to view numismatic information included in many site and survey reports with caution. Often, and simply because there isn't much training in numismatics included in North American archaeology programs, reports include information about recovered coins or tokens that have been written by archaeologists unfamiliar with this type of material. If the descriptive vocabulary used to describe the artifacts in a report seems unfamiliar or just wrong, it might be advisable to try to get images, or possibly visit the material before incorporating it into a new study.

It is likely that information obtained from the numismatic artifacts will also be revisited at some unknown time in the future, with the data contributing to a regional study or perhaps an investigation into a special topic. Devising key words and classification categories for the site so that future researchers can make use of the information is an important part of this process. Once the initial excavation of the site or study area is complete, a report is filed with the appropriate agency or sponsoring institution (such as a publicly owned repository, a university or a museum), and the artifacts are put into a storage facility. Sometimes, and less often than the nonprofessional might imagine, the findings are published in a professional journal or as a book.

Classification may not seem like an important task, but it essential to keeping track of artifacts in a meaningful way. Also, correct descriptions using standard numismatic nomenclature and appropriate classification systems will have critical implications for the proper interpretation of coins. Assignment of the material to an incorrect class of artifacts, or failure to include them in the inventory because they are attached to another object, can have the unintended effect of making the artifacts invisible to researchers.

These ethnographic examples of Chinese wen used as decorative elements of Native American dress help us to understand the difficulty of classifying the coins that are attached to something else. It is difficult to do with ethnographic material; once the coins have become part of the archaeological record the task becomes even more difficult.

**Figure 9.1.** This Tlingit vest was ornamented with many Chinese coins obtained through the fur trade.

**Figure 9.2.** A photo of a "Wishram bride" shows a headdress incorporating Chinese coins. Photo by Edward Curtis, ca. 1910.

In the example in the previous chapter, the Chinese coins that were found attached to the clothing of Native Alaskans had been imported in large numbers and introduced to the Pacific Northwest as part of the fur trade. After they were imported they were widely distributed through trade networks, and then they were attached to the clothing, among other things. The function of the coins had changed from serving as money to being decorative objects attached to clothing, as so often was the case with Asian coins. However the coins could not be found in the museum inventory because the coins were entered into the catalog using the original function for the classification. The classification system did not allow for the change in function when choosing the classification category for the coins. The researcher had been looking for objects that were normally classified as money, not decorative objects; so the change in function made the coins "invisible." Since the coins were on an ethnographic example on display and not from an archaeological site, they were seen. But imagine the difficulty of finding similar coins if their function had changed by the time they entered the archaeological context.

Other investigators may have reasons for revisiting a collection that has been in storage for some time. Anyone trying to use numismatic data for research in North America can encounter difficulty finding references to the material within some reports and artifact inventories. This is also true of museum comparative collections of ethnographic material that may be needed for identification or ethnohistoric studies.

It has been the experience of the authors that coins are often listed in obscure places in reports, in an appendix of miscellaneous metal objects, and a host of creative but unhelpful locations. There is no apparent consensus on whether to list them by materials (metals) or function (money, jewelry, or a good luck piece). Context is essential for understanding the meaning of coins and tokens found in archaeological sites. Coins and tokens are often recovered from contexts that suggest that they functioned as money, and in such cases they can be entered into a catalog or inventory as "money" or "circulating currency."

If all of the recovered coins from a site are known to have been used as circulating currency, their function, and thus their "name" might seem obvious, but that is not the case. First it is necessary to be sure that the function of the artifact is correctly identified. Do not mix coins (circulating currency) with tokens because their functions can be very different, and if a token is mixed in with a group of coins for analysis, valuable information might be missed.

This is one example of a way to classify artifacts that can keep a Mexican hacienda token effectively hidden.

**Misc. metal objects or money**
- **Coins**
  - **US coins**
    - **dime - 1865**
    - **dime - 1867**
  - **Mexican coins**
    - **un real - 1849**
    - **token - hacienda**

If the classification system above is used, the Mexican token is less likely to get the attention it requires and deserves. However, if the categories were organized so that tokens and coins were separated into different categories at a higher order in the classification system, comparisons that can be made to material in other locations will provide more information. The relationships of each coin or token to other artifacts, and the meaning of those differences, are immediately visible if the classification model above is compared to the one below.

**Money**
- **Coins**
  - **US coins**
    - **dime**
  - **Mexican coins**
    - **un real**
- **Tokens**
  - **Mexican tokens**
    - **hacienda**

Any time a Chinese wen or a Vietnamese dong gets classified and cataloged as "money" when it is recovered in North America it is likely to be a mistake. If wen are put in a descriptive category of "money," the resulting analysis will be incorrect (since they were never used as money in North America) and can initiate a string of incorrect assumptions and even generate false reports of the discovery of evidence of "early" Chinese explorers in a given area.

## The Importance of Using Function to Produce Classification Categories

Classifying or cataloging coins and tokens according to function is obviously preferable if it can be done with confidence. But function is a difficult thing to determine without context, so sometimes all coins and tokens are simply listed as either "coins" or "money" without concern about how they were being used or the particular situation where they were recovered. However, because recycling of coins and tokens is so common in North America, it is preferable to list them in a

classification of "numismatic material" with a subcategory of "unknown use," than to list them by their metallic composition. In fact, the alternative known uses of any coin or token must *always* be considered when attempting to assign a function, especially in a colonial or "frontier" context because of the general scarcity of circulating currency.

### The Central Role of Function in Archaeological Analysis

In North America, there are several possible functions for coins and tokens that make it essential to differentiate the various functions from each other. Because coins were scarce for so long, foreign coins were often used in situations that would have been unacceptable in other places or times, and tokens were used in many inventive ways to serve the functions that coinage would under different circumstances. In addition, there was an entire class of artifacts: pre-twentieth-century Asian coins that were never used here as circulating currency but only for noncurrency purposes. These differences in the way numismatic material was used in North America make the function of the pieces an important issue, and one not to be taken for granted.

Function and context are tied to each other here because it is often difficult to get an accurate understanding of the function of a coin or token without understanding the context in which it was being used, and vice versa. Archaeologists are deeply concerned with the context of artifacts, in fact, it is often said that without a sound context there can be no accurate artifact analysis or understanding of their role in the culture of the site. Sometimes context provides only alternative possibilities that must be tested in order to determine the most likely function—the best match with evidence of other activities that took place at the site.

The archaeologist's delight is the site where the functions of the artifacts become clear from their context and association. For numismatic archaeology, hoards of coins buried in obvious storage vessels provide the classic case of being able to infer function, and thus cultural process, from the find. The treasure chest recovered from the wreck of a pirate ship is another classic example of providing a description of the function of the artifacts from their association with the wreck. Other cases may prove more perplexing. How would you define the function of a silver coin with a portrait of the Virgin Mary on it, which had a hole drilled in it? Is it money, a religious medal, a piece of jewelry, or some complex combination of the three? In such cases only the association of the coin with other artifacts can solve the puzzle. Was the coin found in a burial on a convent's grounds or in a container with other broken or damaged silver coins? We need to be able to describe correctly what we have found. We need to know where and how that class of artifact was used in the past and whether it was a coin, a token, or a medal. We have to have some understanding of the meaning, as we have learned it from other places, for finding that material where it was recovered. This is easy when coins are found in the remains of a marketplace or store, but more challenging when found under a doorway or thousands of miles from any place where it served as money.

Once we think that we know why the coins and tokens were recovered from the place where they were excavated, we have to test our explanations. We check our understanding of the artifact against known history and the physical realities of the context from which they were recovered. Of course the overall question that we need to determine is how the recovered coins or tokens relate to the archaeological site in which they are discovered. To answer that question it is necessary to understand the context of the numismatic artifact.

### *Understanding Archaeological Context*

The archaeological context of any artifact is its physical and social relationship to other artifacts and the setting where they are found. If the contextual information associated with the artifact is known or can be determined, then we can maximize what we can learn from that object. Context can tell us more about the world that coins and tokens came from than just what kind of money people were using and what their economy was like.

For example, if tokens from a company store are found in the ruins of residences of an isolated rural town, it is safe to infer that most adults in that town worked for the company. The presence of the tokens alone will tell us that there was a company store in the area. But if we find the store's tokens in most nearby house sites we examine, that distribution will tell us more than the fact that the store was there; it will suggest that most of the people in the community were dependent on that company for employment and the company store for groceries and other supplies and materials.

It is easy to imagine that some coins may fall through the boards of the porch where men are engaged in cards or a game. Future archaeologists would uncover two dissimilar assemblages of coins at this future site: one in association with the cash register area of the store, and the other assemblage would be found where the porch had been.

**Figure 9.3.** Card game in front of a store, with a few coins in play. In such circumstances some coins may fall through the porch floorboards. Photograph by Marion Post Wolcott, 1938.

Our goal in conducting an excavation is not just to list and describe what was found but to place it in some historical, cultural, regional, or other meaningful context. Gambling is an activity that is often associated with low-value coins. So we may draw at least tentative conclusions if some low-value coins are found at the location of a rural general store, in or near a mess tent at a remote construction site as was the case in many railroad work camps in the nineteenth century, in association with some gaming equipment hidden in a privy in

Tucson's Chinatown, or recovered from an alleyway in working-class Detroit.

How do we test our initial hunch that the coins were related to gaming or gambling of some kind? If we keep in mind the fact that the objects of material culture are representative of human activity and the beliefs behind their production and use, our job is a little bit easier. We look for similar artifacts (having the same function) recovered from similar contexts. If gambling is an activity that is known to have usually taken place in similar nearby locations (in the sense of time and place) comparing the context of the recovered coins, their similarity to the pieces found elsewhere, can help us develop a group of testable questions.

If we know that hiding gambling equipment in a privy (usually in some portion of the surrounding privacy structure), and that dice, game pieces, gaming equipment and the like are found there, we have some basis for comparison.

Context can be thought of as the setting, the location in place, time, and social activities where an artifact entered the archaeological record and from which it was later recovered. Context describes a meaningful set of objects and activities that included the artifact being analyzed. Numismatic materials are often found in the context of a marketplace, for example, and it would be described as found in a context where it was probably used as money. Or we can describe a silver or gold dollar recovered from under the doorframe of a house as found in a "ritual context." In North America, the basic meaning of *context* for an archaeologist is the single place where the artifact was found, the other material with which it was found, and the social circumstances under which it was deposited, as revealed by the archaeologically recovered material.

A well-established principle in archaeology is that spatial patterns of archaeological remains reflect the patterns of past activities (Deetz 1977; Schiffer 1987). Since an artifact is a physical product of a total cultural system, we can expect the artifact to present evidence about the perishable parts of the system that created it (Leone and Potter 1988). Changes in the cultural system will produce changes in the content of the archaeological record. By examining the correlations between the structure and content of assemblages and their spatial and temporal distributions, we can study changes in the culture that used them.

## Changing Function and Context

However, when a coin's function is changed, and it is no longer used as currency, understanding all of the ways it was used or how it entered the archaeological record becomes much more challenging and complex. This is especially true when the pieces were shipped overseas and used by different people than those whose homeland produced them. In such cases, when coins are used for nonmonetary purposes, it is important to be aware that once an artifact is named, its function is tied to that name. Although all Chinese wen started their use-life as money, the change in context (when it was moved) reflected a change in how it was used (its function). Other challenging pieces are tokens produced by nongovernmental agencies for the purpose of being used as payment of any small debt. Anyone unfamiliar with the role of tokens may need to refer to numismatic literature to understand the variety and extent of substitutions for circulating currency that were in use during any historic period.

**Figure 9.4.** This Andrew Jackson token of 1863 was privately minted to substitute for a cent in circulation.

Sometimes we can work from documentary evidence and ethnographic information to determine what we should seek as contextual evidence. This is the case with Chinese wen and Vietnamese dong, used in North America in the nineteenth and twentieth centuries for medicinal purposes. At the time of writing, the authors are unaware of any Asian coins recovered from a secure context indicating a medicinal use. However, we have a great deal of ethnographic information about how Chinese folk medicine incorporated coins in some treatment of aches and pains, colds and flu, skin irritations, and other ailments of everyday life.

Let's assume that some Asian coins are recovered from a site, and we want to know if they were used for medicinal purposes. How can we know if our recovered coins were used for folk medicine, especially since we know that the same coins also had other uses as well? There are several steps: research literature and ethnographic evidence to understand what medicinal uses may have been practiced; learn what coins were used for such practices; and finally find the appropriate coin in the same context with other personal care products, verifying that possibility.

Since we have already noted that no such examples have come to our attention yet, why do we even mention this possibility? By describing the practices and the coins favored for particular treatments, we alert researchers to the possibility that recovered Asian coins can be tested against the context to check the likelihood that such use took place. Archaeologists who recover the coins will need to check the context, the context of the physical relationships to other recovered objects, and the social context of who lived or worked in the place where the coin was recovered, to see if the context is also correct. If the context is correct then we have significantly increased the likelihood that the coins were used for medicinal purposes. That knowledge begins to build up until we have enough examples to refine our description of the contexts where we expect to find coins used in association with "home remedy" types of medical practices. Also, as the number of solidly identified examples of the coins recovered from such contexts grows, we improve the description of coins likely to be used for this purpose. The distribution of artifacts within an excavation unit can often give us fine grained information, as can easily be imagined in the case of burial grounds. Objects recovered from gravesites can tell us a great deal about the beliefs of the community. The distribution of particular objects, religious medals for example, or Chinese wen recovered from the four corners of the graves can give us religious or ethnic identity. Combine that information with the distribution of those graves in relation to each other, and possibly those from a different site, and our understanding of social relations in that community starts to develop.

## Ritual Context and Belief

Sometimes what we find in similar ritual contexts in widely different settings can give us information about the underlying beliefs supporting activities that took place in those contexts.

In our modern and more secular world, few actually expect the sacrifice of a cent or two in the fountain at the mall to have the effect of increasing the chances of our wishes coming true, yet adults in our society continue to carry out the practice and to teach it to children. The basic behavior of depositing something of value (making an offering) in hopes that it will improve the likelihood of a desired effect is an ancient one, and so common that archaeologists can recognize and compare offerings from around the world in many time periods. We can see that in the past the offerings of gold coins into sacred springs indicated a strong belief in the effectiveness of the sacrifice (the deposited coin) to produce the desired results, just as a five dollar chip in the lobby fountain of a casino can indicate a strong belief in its ability to attract "Lady Luck." It isn't just the material that was deposited that is of interest, but what the person making the wish believes and how deeply they believe it. For example, a cent wish indicates a weaker belief in the efficacy of the offering than a gold coin or five-dollar gambling chip.

**Figure 9.5.** Tourists continue to deposit coins into the Trevi Fountain in Rome, an old tradition here being observed in November 2013.

There are many other examples of belief that can be represented by recovered coins. The belief that a silver sixpence can be imbued with magic or used as an amulet carrying blessings was imported to colonial America from the British Isles along with the people. Sara Cofield recently reviewed a wide use of silver sixpence as talismans; she relates them to a sixpence recovered in the Chesapeake Bay and comments on evidence from other places of the same practices (Cofield 2014). The persistence of this practice was the subject of a discussion at the meetings of the Society for Historical Archaeology in Seattle in January, 2015. Conference participant Margaret Clark reported that the practice of putting a silver coin in a bride's shoe had been going on in her family for at least three generations. These are just a few examples of how material culture (what is being deposited) is an expression of underlying beliefs. Belief is something that is hard to understand under the best circumstances, and to understand what people believed in the past is even more difficult. Other beliefs are represented by hidden objects, such as bent coins. Bending metal objects is a way to turn luck in many cultures, and bent coins are included in buried charms. One way to come closer to understanding belief is to examine its expression as manifested by the objects people left behind—especially when similar objects are found in different places from different times. This is why the context, as well as the objects recovered, is so important to reconstruction of the past. Context is a complicated term, as some of the examples in this book illustrate; however, the use of ethnographic analogy is helpful in interpreting contexts of the past. Any archaeologists benefit from ethnographic and historic studies of the material culture of religious and other spiritual beliefs regarding ritual objects and the equipment and other materials needed to care for it. Once a profile of expected artifact associations and contexts can be developed, it is much easier to identify newly recovered material and test the context in which it was found against the expected associations.

**Figure 9.6.** One of several deposits of coins that pilgrims and visitors pass on their way to the Chapel of the Holy Cross in Sedona, Arizona.

## Association and Patterned Distributions

A well-established principle in archaeology is that spatial patterning of archaeological remains reflects the patterning of past activities (Deetz 1967:110; Schiffer 1987:11). Since an artifact is

a physical product of a total cultural system, we can expect the artifact to present evidence about the perishable parts of the system that created it (Leone and Potter 1988: 194). Changes in the cultural system will produce changes in the content of the archaeological record. By examining the correlations between the structure and content of assemblages, and their spatial and temporal distributions, we can study changes in the culture that produced and used them. What are some of the patterned distributions that apply to numismatic artifacts?

*Site Complexity Revealed by Numismatic Evidence*

Examples of the same type of coins found in different locations in a site, or in related sites, may represent different cultural processes or different people. Room by room comparisons can yield evidence that can signify occupation by different nationalities or different status (Heldman 1980:106). How does the archaeologist determine in what cultural process or system of behavior a coin was used? Although it is not always possible to define the function of a coin or other object, its association with other articles is a powerful tool of analysis, not only to define a coin's function but also to interpret the site as a whole.

For example, if we can use a combination of ethnographies, historic documents, and ethnographic artifacts to put together a detailed idea of an activity, or activities it is possible to anticipate what artifacts found together represent. This is the basis of the behavioral systems approach used to work out the various noncurrency uses of Chinese and Vietnamese coins recovered in North America. The process uses assemblages of coins and contextual associations with other parts of a site to generate testable hypotheses of how the recovered coins were being used when they entered the archaeological record.

Measuring the meaningful variations of the distribution of coins has been part of traditional numismatic archaeology. These studies have attempted to tie patterns of distribution to historic events and have aimed more toward the reconstruction of culture history than toward understanding patterns of human behavior and the systems of change in human society. This is an undeveloped aspect of numismatic archaeology that would benefit from the combined efforts of cultural anthropologists, archaeologists, and numismatists.

*Circulation*

The movement of coins among people and institutions as part of an economic system is the way that most coins and tokens are moved from one place to another. Since coins are designed as part of an economic system, they are sanctioned by a political authority, and that authority is usually indicated in words or symbols on each piece. The eagle is a sign of the authority of the US government. Any government wants its authority to be recognized by having its money recognized and used within its territory.

When coins from many different countries are freely used and exchanged in a territory it is usually evidence that political control over trade in that area is weak. It is also possible that the region has experienced some kind of war recently and the authority for producing coins is not yet fully established.

In the Old World, especially in Europe and the Middle East, the history of what coins circulated in which places is extensive and dates back more than two millennia. There have been so many coins produced, and they have been around for so long, that the study of recovered coins has even given us the names of rulers and states that have not been known from any other source. Circulation patterns, the way that different coins moved within political/economic entities, has been the subject of thousands of studies over the centuries. The immense number of coins and tokens in private collections and museums combined with the ones recovered in controlled excavations in the Old World provides a completely different numismatic "map" of usage than could be created for North America.

Coins and tokens have a much shorter history of use in North America. Although we know of many types of shell and bead currency, we don't have a strong understanding of them, how they circulated, who issued them, or how they were integrated with the political, religious, and economic systems. The introduction of coinage to the New World came in the form of the great extraction of wealth headed for Europe, and most of those coins ended up either in Europe, Asia, or on the bottom of the ocean. Long considered the social and cultural end-of-the-line, early North American colonial economies struggled to keep the economies going and to keep enough circulating currency around to allow people to pay bills and debts. The popularity of tokens, often imported or locally produced substitutes for small change, is also a sign of the relatively small number of coins circulating in North America until fairly recently.

The difference in the number of recovered coins and tokens recovered at a site, which can be thought of as economic and social "data points," suggests that different analytical methods are successful in Europe and in North America. It appears to the authors that it might be useful to outline some possible ways to think of patterned distributions, as the human behavior that produces those patterns was different in America.

## *Chronologies: Using Coins to Date Sites*

In the previous chapter the methods used for determining the production date of numismatic material were presented. Once the coin production date is established, it may be possible to determine the earliest date when the coin could have entered the archaeological record and use it to help date a site. However there have been many situations when the date of production indicated on a coin has been misapplied and incorrect dating of a site or a portion of a site has resulted. It is important to understand and correctly apply the dating methodology to get accurate results. Most North American sites can be dated with historic records, so these techniques work best and are most useful for different parts of complex sites.

### Absolute Dating

If the date of the production of a coin is known and that coin was found in the excavated cellar of a building, then we could say that the deposit in the cellar can only be as early as the date on the coin. The principle of dating a deposit on the basis of the newest artifact in it is known as *terminus post quem*; the date of the artifact provides the earliest possible date of deposition. Coins, especially those marked with an absolute date, can be powerful tools for site dating. Their date of manufacture is usually easier to determine than the production date for ceramics, glass, or pipe stems. It is important to remember that coins may stay in circulation for decades, even centuries in the case of some Chinese coins. For this reason even a terminus post quem date can be years early if we fail to allow for the time the coin stayed in circulation.

A *terminus ante quem* date (the date *before* the artifact entered the ground) may be obtained when a site is marked either by dateable artifacts in a higher stratum, showing that the lower strata were deposited before the date of that artifact, or by the absence of a certain artifact type in a suitably large assemblage. Therefore, for example, we could date an English site as pre-Roman if it had many coins, all of which were Celtic.

In North America the date of production of a coin may be much less useful than the date of the coin's importation into North America. For example, if there is uncertainty about whether a site was temporarily inhabited by Chinese workers in California during an 1875 railroad project or the 1884 construction of a dam nearby, it may be possible to determine the date from the mix (assemblage) of much older Asian coins found there. Finding even one Vietnamese zinc coin securely dates the site to the 1880s rather than the 1870s because zinc coins from Vietnam were not imported before the 1880–81 period. Most of the Chinese coins found at the site are likely to carry reign dates from several earlier periods and are not helpful in this case because they were imported heavily for noncurrency uses beginning in 1850.

**Figure 9.7.** A Zhou Yuan coin (951-960) and a coin of Dao Guang (1821–50). Similar in appearance except for the specific characters, both coins could be found in circulation in China in the late nineteenth century, and could have been found in an assemblage of Chinese coins in North America at that time.

Occasionally archaeologists get lucky, and a site provides evidence in the form of both a terminus post quem and a terminus ante quem date. These situations occur most often in other parts of the world, but the principle should be reviewed here. Such a case comes to us from fourth-century Palmyra, Syria. In 1975 Polish archaeologists uncovered the temple of the goddess Allath. This temple had been destroyed by iconoclastic Christians, who had entered the temple and smashed the cult statues inside the temple walls. In the course of the excavations archaeologists found a small hoard of bronze coins under a piece of the broken head of a small statue. Using the most recently produced coins of the hoard, a terminus post quem date of 378 CE was produced. Another coin found directly on top of the stone floor nearby provided a terminus ante quem of 387/8 CE. The numismatic evidence dates the destruction of the Allath temple to the ten-year period from 378 to 388 CE.

In the Chinatown at Riverside, California, an accidental fire destroyed the wooden buildings at the end of July, 1893, and the fire rubble was pushed into the cellar pits. In a matter of days after the fire, brick floors were laid over the rubble-filled cellar pits, and new brick buildings were constructed at the same location. In the limited test excavations of 1984–95, zinc Vietnamese coins were found. They must have come to Riverside after 1880, and they must have been deposited before August, 1893, when the brick floors were built. In this case, the brick floors provide the terminus ante quem. The analysis of these coins was an important step in learning when the Vietnamese zinc coins were imported into the United States; archaeology provided almost all the relevant information (Akin 1992).

Hoards are often used to date sites. Various forms of analysis, often very specific to the location and time period involved, have been worked out to allow archaeologists to cross-date with coin hoards. Almost all of the literature dealing with these methods has been associated with either Old World or shipwreck archaeology.

### *Relative Dating*

When coins have been in circulation for a length of time, they are less useful for dating on the basis of their date of production. Sometimes the date of a coin's importation into an area, if it can be established, provides a better date. A variation of this same approach is needed in the western United States to deal with Chinese coins that stayed in circulation for hundreds of years in their home country before export to North America. While some archaeologists make the case that Chinese coins cannot be used for dating because of their long circulation life, this position is weakened if we can establish a good importation date, especially for an assemblage. Chinese coins up to two thousand years old have been found in archaeological sites in California, but they were only imported into the country in the last 250 years, with most of them coming in since 1850. How can we use them to date sites? Briefly stated, because coins were imported for different reasons and as parts of different systems of behavior, it is sometimes possible to use them for site dating. This is done by combining information on the circulation of coins in the country of origin with knowledge of importation practices in different time periods to produce profiles of expected characteristics of the coin assemblages from different periods. Comparing coin assemblages from sites to the profiles can help us to associate a site with a particular period of importation and date the site to, at least, a more narrowly defined period of years.

Another example was recently developed. In northern Idaho and western Montana, the occupation dates of the Northern Pacific Railroad's (NPRR) Chinese work camps are well known: 1881 through 1883 (Merritt 2009; Merritt, Weisz, and Dixon 2012). A dating problem first raised in the 1980s may now be answered within a tighter time frame (Akin, Bard, and Weisz 2015). When did Vietnamese zinc dong move into circulation in Guangdong Province during the coin shortage of the 1870s and 1880s? No sites in the western United States from the 1870s showed the presence of dong, while sites with firm dates in the late 1880s and early 1890s all contained dong.

The NPRR Chinese work camp site data suggests that Vietnamese zinc dong arrived with the workers along the railroad line by sometime in early to mid-1881 (Akin, Bard, and Weisz 2015:Table 1). The 1881 dates are the earliest yet known for deposition of dong at American sites. Communication and commerce with China was surprisingly quick, and it is already known that imported food and other goods available in the ports of Guangdong Province appeared along the American West Coast from Vancouver to Southern California within weeks rather than months.

Because the occupation dates for the NPRR camps are known from railroad records, we can see that the dong appeared by early 1881 along the shipping pipeline that ran

from Guangdong to the railroad camps. This information can help us date future discoveries of small, undocumented sites or even discrete portions of complex sites occupied over several decades.

## *Using Concepts of Use-life and Formation Processes to Improve Analysis*

### Understanding the Use-life of Artifacts

Correctly identifying the function (the way people used an artifact) is essential to a complete and accurate understanding of it. It has also been demonstrated that a coin or token may have more than one function, or that the functions may change over time. Most archaeologists trained in North America use the term "use-life" to refer to the history of the artifacts' functions, although different vocabulary is used elsewhere. All items of material culture have a history. The history begins with the production of the artifact, such as the minting of a coin, although attention may also be paid to its "prehistory," such as mining of the ore for the metal and even the royal proclamation, congressional resolution, or business contract that authorized the minting. Production is followed by a use-life that will include its original intended use (normally as money), and the recycling of the artifact into other uses (e.g., pulling a silver dollar out of circulation as money and using it as a good luck piece). Finally the artifact enters the archaeological record, the place where it was when it stopped being used for any purpose. Some coins are buried and recovered later (as in hoards and older Chinese coins used in China). Such movement is considered as a part of their use-life.

Coins and tokens can have complex use-lives that can stretch over many more years than their use as circulating currency. At the end of the artifact's use-life it "enters the archaeological record" by being lost, intentionally buried, hidden, or otherwise arriving at the place from which it is recovered. Sometimes artifacts are moved after people stop using them, and they have been covered with soil or buried, such as coins recovered from a creek where rubble from a store fire had been dumped. Everything that happens to the artifact from the time of loss or discard is part of its use-life. And everything that has happened to it is the result of some social or physical formation process.

Coins and tokens are not typically discarded, and they usually enter the archaeological record for some other reason than trash disposal. There are a number of reasons for this, the most obvious, and probably most important, is that they have at least two kinds of value even after they have been demonetized or have stopped being used as circulating currency. Numismatic pieces are often made of valuable, useful, or pretty metals and have an intrinsic value that is a value based on the value of the metal from which the coin is made. The metal may be recycled, either melted down and reworked, or transformed into jewelry, religious medals, or some other object. When coins stop circulating as money in a given society, they are often recalled by the central political authority for destruction and replacement with a new form, usually a different denomination, of coinage. Alternatively, they may be ignored by authorities, and their disposition is left to whoever happens to own them. In either case, even after currency has been demonetized for some time, people will hold on to a coin or token for various reasons. Collecting, sentimental or patriotic reasons, religious reasons, the hope that they may come in handy for something sometime, and even giving them to children as toys all may be reasons to retain old coins. Anthropologists call this practice "curation."

The end result of these beliefs and behaviors is that coins usually enter the archaeological record at a different point in their use-life than other objects do. Archaeologically recovered coins were usually either in storage, often buried in hoards, or lost; shipwrecks and marketplaces are the largest sources of lost coins. But individual lost coins may be found anywhere that people have been.

There are many implications for this very basic difference in the location of the interface of the cultural system and the archaeological record. The most important implication is that because coins are usually "frozen in time" and enter the archaeological record in the middle of their use-life, instead of at the end of it (they are not "used up"), a lot more information about the cultural system of which they were a part can be gleaned from each coin. We are likely to be able to learn more about the way the coins functioned, how they were stored, or how and for what reasons they were moved from one use to another than we are to find out about materials that are only recovered after they are broken or used up. Another important difference is where you can expect to find coins. The number of coins recovered in hoards, singly from the soil, and from shipwrecks probably exceeds the number recovered from systematic excavations by orders of magnitude. Predictive models concerning where numismatic materials can be expected to be found have to be adjusted to account for this fact.

### Formation Processes Affecting Numismatic Artifacts

In Michael Schiffer's 1987 title, *Formation Processes of the Archaeological Record*, he develops the discussion of process and properties of artifacts that were lost but states that little is known in detail about loss. While describing some principles regulating the conditions of loss and characteristics of artifacts subject to loss (that they are generally small and lost in sand or mud for example), Schiffer does not address the characteristics or conditions of any particular class of artifacts, or the fact that different conditions regulating loss apply if, for example, the artifacts involved are small gold coins or glass beads (Schiffer 1987:76–79).

Schiffer outlined a series of environmental, social, and ideological processes that affect all material culture and refers to these processes as *formation processes*. He suggested that when we include what we can learn about the formation processes that are part of an artifact's history we can learn new things and improve the accuracy of what we do know. Social formation processes impacting numismatic material are regularly occurring cultural activities, such as sewing coins onto clothing as a way of keeping and displaying wealth. Modifications and reuse of coins is a social formation process easily recognized in the archaeological record.

Analysis of coins and tokens in relationship to human beliefs and activity needs to consider what formation processes acted on those artifacts. This is most easily done by reviewing what we already know about the many social and physical formation processes that have affected numismatic material in the past to see if the same thing might have happened to


**Figure 9.8.** Four arrangements of holes in US coins: One hole at top, for suspension; two holes at top and bottom, so that something may in turn be suspended from the coin; two holes close together to allow the coin to serve as a button; and many holes in a wen that was part of a complex talisman. Courtesy of Riverside Stamp and Coin Shop.

any artifacts that are currently being analyzed. Since coins and tokens are used to store wealth, which can be active, passive, intrinsic, or symbolic, coins and tokens can be affected by many, sometimes unusual, formation processes. There are so many forces that act upon coins and tokens that it is impossible to list all of them, so we need to focus on the most common forces and the traces they leave on the artifacts and that impacted their contexts. However, if we view the coins and tokens as reflections of the economic and social forces at work when and where they were deposited, we can understand them better and gain insights into everything from changes in style to changes in government.

There are many formation processes that are associated with certain historic events that are presented in conjunction with the descriptions of examples described in this book. There are some formation processes that are associated with coins everywhere they were used, such as the issuing of coins by governments as part of their regular responsibilities. The traditional habit of burying a hoard or attaching coins to clothing or other objects as a decorative element are social formation processes. They are all regular patterns of human behavior that have identifiable effects on coins and tokens.

Some social formation processes consist of the effects that some architectural features or styles of building construction have on coins that fall to the floor. This was seen in Sandpoint, Idaho, where the construction led to some interesting observations that could be made based on the coins recovered from under the floor. In settlements where the buildings and even the "sidewalks" connecting them are all raised construction of wooden boards, like those commonly found in Western "frontier" communities, coins that are archaeologically recovered have a different arrangement than would be found in places where buildings, roads, and paths are all at the same level. Even in different sections of the same community, the assortment of recovered coins would be affected by both the methods of construction and relative value of the coins to people living and working there (Bard 2014).

## Some Signs of Formation Processes: Use-wear and Modifications

Over time we develop understandings of the formation processes commonly at work in a particular area. This allows us to more easily see regularly recurring behavior and understand its impact on artifacts. In addition to being a common result of several formation processes, holes punched into coins usually signal a change in function from circulating currency of some kind into some sort of decoration (sewn to clothing) or as a religious medal.

Two of the authors remember regularly seeing large old, US cent coins with holes in them used as weights in combination with spikes or spindles used for keeping receipts and other small bits of record-keeping papers in order on a desk or counter top. Someone would put a hole just large enough to accommodate the spike right in the center of these once-inexpensive heavy copper coins.


**Figure 9.9.** This large cent, with a large center hole, appears to have been used as a spindle weight. Courtesy of Riverside Stamp and Coin Shop.

When a paper needed to be added or removed from the stack of papers accumulating on the spike, the coin was lifted off the spike and returned after changes were made. Most of the time these devices, if they can be said to deserve such a title, were homemade. Sometimes the spike was hammered through a piece of wood used as a base; sometimes they were embedded in countertops or desktops. There is probably no formal record of these devices, but childhood memories and the considerable numbers of large US cents with large central holes (not suitable for suspending coins) are what remains today of this practice common in cities and towns in the nineteenth and first half of the twentieth centuries.

Putting a hole in a coin or token is probably the most common modification made to coins. Holes are added for a number of reasons other than attaching them to clothing or suspending them from cords or chains. Any formed piece of metal had value in frontier North America where wooden cabins that were going to be abandoned were often burned to the ground so that the iron nails could be more easily recovered for reuse. Round flat pieces of metal make wonderful washers when holes are added, for example. There is at least one known case of a Chinese wen, which was made with a central hole in it, recovered from a railroad work camp in Texas having been used in that way (Briggs 1974).

Sometimes old US dimes and Canadian ten-cent pieces, a good source of formed silver, were filed, smoothed, and then

etched as a "***love token***." Quarters and half-dimes were used as well, and occasional half-dollars. This was a popular practice that was common in the late nineteenth century.

**Figure 9.10.** A half-dollar made into a love token by planing one side and inscribing a monogram.

While the formation process that this coin experienced as part of its use-life was unique in the sense that only this coin was engraved with these particular initials and design, the widespread cultural practice of making love tokens was a common social formation process that caused similar physical modifications to US dimes.

Sometimes we can see a common formation process, such as using particular coins as talismans. Using descriptions (drawn from ethnographic literature) of how the coins were put together, we can see signs of that formation process, such as a common practice of using Chinese wen to make talismanic coin swords because that use leaves a particular patina on the coins.

**Figure 9.11.** The distinctive arc-shaped patination on this Chinese coin goes with the iron stain where the coin was once placed against the central rod of a coin sword.

The older coins of the same general type as the ones in the coin swords were sometimes sewn on clothing. This ethnographic example demonstrates how some Chinese wen were removed from their original use as currency and added as a decoration to a dress on the other side of the Pacific. The process of decorating clothing with coins as buttons or by suspending them with thread from the clothing is familiar; although, many present-day examples of this use incorporate imitation coins instead of real ones. However, this use is not usually considered for archaeologically recovered coins unless the coin has a hole near the rim. Chinese coins already have a hole, although additional holes are sometimes added.

Study of the effects of specific formation processes on a wide range of examples makes it possible for archaeologists to recognize specific human behaviors that might have produced similar effects on comparable artifacts.

## Repurposing and Postdeposition Formation Processes

In Alaska, none of people involved in the North American side of the Pacific fur trade could read the Chinese and Manchu mint words on the coins. No one knew anything about the original

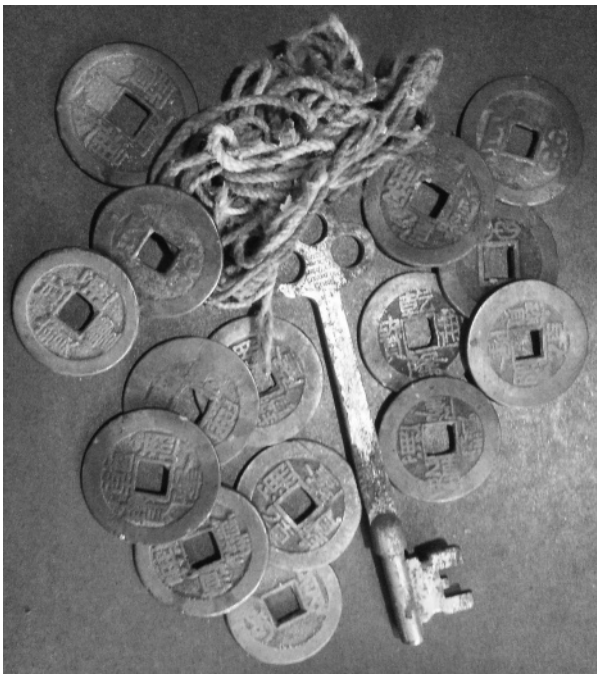

**Figure 9.12.** Found in an old Rhode Island barn around 1990, the Chinese coins appear to have formed a decorative talismanic arrangement to which the key was attached.

production or distribution of the coins, and none could read the reign names that told when the coins were produced. These were aspects of the coin that native peoples were not concerned with. For the North American native peoples the status of having access to traders was a large part of what was important, although they shared an interest in the value of the copper with the Chinese. The Native Americans did not care that new coins, fresh out of the mint, were mixed with older coins going back over 2,000 years in China. Newer or older, the coins all had the same value in Alaska, at least by weight and size. For the native peoples, the "primary context" was the ship that brought the materials to be traded.

While it can be helpful to archaeologists recovering the coins to study the dates and mints of the Chinese coins that are recovered archaeologically in Alaska, as assemblage analysis can provide hints as to the likely ports of call where the ships picked up the coins, no Native American or Native Alaskan distinguished in any way between one type of Chinese coin and another, except by size. No information about the original context of the coins is helpful to archaeologists analyzing the uses of these coins in Alaskan trading villages, or in native settlements inland from the coast. In fact, it is a basic misunderstanding of how unimportant the reign date was to a coin that was part of the fur trade that has led to many false claims of early Chinese contact with North America.

In another example tokens maintained the same general intended purpose, to make small purchases, but lost some of the specifics of their primary context when they were shipped out to Jamestown Colony (Straube 2014). Even though it was Englishmen from the same society that came with their tokens and coins to Jamestown, the coins and tokens were quite thoroughly removed from their original context when they were carried across the ocean. There may have been at least two ways that coins and tokens were valued at different times in

Jamestown, but in the end it mattered not at all whether a small round copper disc had been a theater admission token, a token good for one beer in a public house, or a toll token good for crossing a bridge. In Jamestown there were no theaters, public houses, or toll bridges. All the tokens of similar size served as the low end of the currency system in Jamestown and had at least substantially the same value, quite aside from whether or not they had legal tender status in Europe, were considered current in Europe, or varied in value there as reflected in their inscriptions. In Jamestown, the inscriptions and devices did not matter. A small copper token was a small copper token, and that was it. The fascinating stories told by the tokens about English society and English economics were not relevant on the western side of the Atlantic Ocean.

In any case, it is important to remember that analysis of any numismatic artifact *can only be complete* if it is described, the context of where it was found is known, that we understand the ways that it used and what it meant to those who used it, and the formation processes acting upon it are understood.

### *Differences in North American and European Nomenclature*

A recent article that exemplifies the European literature is the essay "Rethinking Numismatics" in which Kemmers and Myrberg (2011) suggest a series of stages, or what they refer to as *contexts* in the use-life of numismatic artifacts. The Kemmers and Myrberg model presents four stages in the life of any artifact; each stage represents a context used to describe the use-life (what they call the *biography*) of coins. In their model *primary context* refers to the production of the coins; *secondary context* refers to the use of the coins; the *tertiary context* refers to the deposition or loss of the object; and the *quaternary context* describes the period of excavation and analysis of the material.

Assigning a single secondary context to the entire use-life of a coin, which may have taken place over centuries on two continents, is a bit limiting. In Europe, most coins are found closer to their place of production; although, they may also have extremely complex biographies involving multiple reuses and transfers from society to society. Such complexities are not usually explored in European studies where coins' use as currency has normally been the only use discussed aside from occasional mention of votive deposits or inclusion in burials. It is natural, in the European setting, that coins would be assumed primarily to have been used for currency. Today's European societies either trace or claim direct descent from the societies of the Greek and Roman world that originally introduced coins to most of Europe. Greek and Latin could still be read, on the basis of continuous scholarly tradition, by those who developed modern numismatics and archaeology a few centuries ago. Until quite recently (and to some extent today) gold coins of 1,000 and 1,500 years ago remained in circulation for savings and investment uses through European banks and monetary exchanges. To a considerable extent, many ancient European coins never fully left their original social context.

But in North America, the sharp change from the precontact to postcontact periods puts a clear dividing line across the continent's past. Coins, for most of the postcontact period, were either imported or the product of imported cultures. Scarcity of coins, frequent use of substitutes, and the sharp differences between cultures all contribute to a very different situation in North America.

While the circumstances of production if they are known are certainly important, in North America this reveals less about the society that used the coins. Production includes the purpose of the piece, the reason why it was made in the first place. This information can tell us about the state of the metallurgical technology, the economy, the politics, often the religious and other belief systems that are indicated with symbols and words on the pieces. This is almost all information that we have determined from other sources than the specimens themselves, but study of the numismatic material can help fill in details. But when the pieces were shipped overseas, from the place where they were produced to another continent, and used by different people than the makers for various monetary and nonmonetary purposes, information related to production becomes almost entirely irrelevant to those studying the new society in which the coins were used.

## *Conclusion*

The idea that the objects (material culture) that make up the daily "stuff" of a society reflect the material life and underlying beliefs of a society is a powerful tool. The underlying beliefs any culture has about why the world works the way it does are represented in objects, especially objects that feature symbols, such as a monarch or god, inscribed on the surface. Knowing that connection exists, combined with the various tools of scientific investigation, allows archaeologists to learn a great deal through just a few artifacts. Using scientific methodology to test the ideas and conclusions that are developed makes the final product of any investigation stronger and more likely to survive the test of time.

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# Using North American Numismatic Evidence

## Introduction

Numismatic research provides a rich source of information that can be used by archaeologists, but it is essential that archaeologists understand the language and methods of describing and recording data used by numismatists if they are to use that information and work effectively across disciplines. While there are special contributions that North American numismatic archaeology can make to the larger fields of numismatics, our emphasis here is on how archaeologists can use numismatic evidence.

### *Special Contributions of North American Numismatic Archaeology*

It is worth just a moment to emphasize the importance of the methodology of science, and our understanding of material culture as a reflection of a society's socioeconomic organization and worldview, to the practice of numismatic archaeology in North America. The placement of most North American archaeology programs within the field of anthropology gives us ways to address issues of concern about the domination of colonial perspective (Haselgrove and Krmnicek 2012:244). A special contribution of North American numismatic archaeology is the discovery of the value and use of importation dates, in addition to production dates of recovered artifacts.

The meaning of many coin and token artifacts recovered from unexpected places can only be understood when examined with an eye to the possibility that they arrived here functioning as something other than money. When numismatic finds are placed in a framework of chronic shortages, shifting and erratic political authority, as well as the movement of numismatic materials over vast distances, it is clear that North American numismatic archaeology must differ in interesting ways from its sister disciplines in Europe and Asia. Also, because of the existence of shell-bead money (and possibly other forms) prior to contact, North American numismatic archaeology is in a position to make needed contributions to the study of transitions from barter to monetized economies using many different forms of circulating currency (Chase-Dunn et al. 2013).

**Figure 10.1.** A Chinese coin of the Kang Xi reign (1662–1722), if found out of context, could have been imported at any time after about 1785. As an original part of a Chinese sewing basket, this one could not have been imported before the 1890s.

The behavioral systems approach, presented in this chapter, can be used in many circumstances to help us understand the importance of "ethnographic analogy," in the analysis of coin assemblages as reflections of human behavior and a better understanding of the use-life of artifacts.

The behavioral systems approach is a method of analysis that can be applied to numismatic artifacts deposited in different locations that helps elucidate the differences in how the artifacts were used during their active use-life. Archaeology, as the anthropology of the past, provides us with material culture that helps us "see" patterned behavior of people in the past. As anthropology helps us understand how people interact with each other and the world around them by looking at their repeated and patterned behavior, archaeology helps us understand the past by looking at the patterned distribution of artifacts that are the material remains of cultural processes.

Coins and tokens are part of the material culture remains of several different systems of behavior that extended across the continent and through time. In this book we have seen numismatic artifacts serving as currency, but we have also seen those artifacts used for noncurrency purposes, such as decorations, game pieces or markers, talismanic or magic charms, part of medical treatments, and as components of collections. The challenge for anyone looking at numismatic artifacts is to determine how any particular artifact was used and reused during its use-life.

Every coin or token was, at any given time, incorporated into a distinct behavioral system. Some coins and tokens were repurposed or reused (laterally cycled), transferred from one set of activities to another more than once in their use-life. If the artifacts were used in various behavioral contexts, how do we identify the contexts and determine what was going on in the past when the artifacts entered the archaeological record?

Examination of several different systems of cultural behavior that incorporate numismatic material provides us with models of the expected characteristics and distributions of coins and tokens in each of these systems as they are recovered. By developing models of artifact use, based on ethnographic analogy, studies of previously recovered assemblages, and historical documents, it is possible to establish a profile of the artifact assemblage representing each behavioral system.

Items of material culture incorporated into the activities of migrating peoples must be considered as reflections of the behavior of communities in motion. Patterned distribution of the artifact assemblage produced by migrant communities and trading expeditions can be interpreted if the behavioral systems that produced the assemblages are understood (Deetz 1967:80).

A comparative systematic survey of coins representing a variety of behaviors that are recovered from several types of sites can also improve our understanding of site-formation processes by addressing the questions of how coins enter the archaeological record under different circumstances and what historical and behavioral processes are revealed by differing circumstances of coin curation.

The major advantage of interpreting coins by connecting them to a behavioral system is that it allows the archaeologist not only to identify and analyze the coins, but also to increase understanding of the cultural behavioral systems that incorporated them. With this approach, the archaeologist is assisted in the fine-grained reconstruction of past lifeways. This approach has only recently been used to deal with numismatic materials and represents a new level of interaction between anthropology and numismatics that has a promising future.

When recovered coins can be identified as part of an assemblage with a distinctive profile, we can decipher not only the behavior that was associated with the coins but also other characteristics of that behavioral system, such as period of importation. This is especially important in North American numismatic archaeology because so much material was imported from places where it had circulated for some time before entering North America.

By producing comprehensive profiles of the importation, distribution, movement, and function of numismatic materials, for each behavioral system, in each historic period, it is sometimes possible to use some coins for dating studies. The process of viewing the numismatic material as parts of behavioral systems makes cross-cultural dating methods applicable in situations not previously recognized.

### Building Behavioral Systems Models

The behavioral systems method of analysis consists of two components. The first component is an open-ended set of models of past human behavioral systems. The systems consist of realms of human activity incorporating the use of coins. The other component is data—in this case numismatic data—such as reports and the records of comparable assemblages that have been recovered, identified, and entered into a descriptive database. One example of such a behavioral system is gaming among overseas Chinese in North America. Gaming as a behavioral system differs from a single gaming activity because it includes many related activities, such as importing the gaming pieces and storing them for future use. The coins associated with each behavioral system can be conceived of as a characteristic assemblage of coins, with a profile of expected traits, to which new finds can be compared.

The behavioral systems models will be different for every way that any given type of numismatic artifacts can be used. For example, for Asian coins in North America we have several noncurrency-related uses for those coins. They were heavily used to decorate clothing and other important items. They were used as gaming pieces. They were used in many Chinese folk religion practices. They were used in some symptomatic medical treatments, and they were, as many coins were through history, kept as parts of personal collections.

Each of these behavioral systems had a particular span of time, a specific geographical range, and incorporated coins or tokens with a characteristic set of traits. For example, talismanic uses for coins would incorporate particular coins that were in use when the first Chinese people immigrated to North America. The time frame for that use began with the arrival of the first Chinese people (during the California Gold Rush that began in 1848). In contrast the use of Chinese coins for decorating clothing and jewelry began before the arrival of any Chinese people, during the northwestern fur trade, by 1785 when traders exchanged cheap coins for valuable furs.

### The Coin Assemblages Associated with Each Behavioral System Model

For every human activity that incorporated numismatic material, there is a set of attributes that will be found in any assemblage of coins associated with it. In order to have some idea what that "typical" assemblage for any particular usage of the coins might look like it is necessary to look at previously excavated material and ethnographic and historic material. Each of the models of past activity and behavior would be characterized by different assemblages of coins recovered from the respective sites and involved in particular uses. This means beginning the research reviewing many previous excavations and going through many institutional archives. During such an early step of research, the importance of getting everyone to use standard numismatic language will become very apparent.

## *Patterned Distribution*

Another key to understanding cultural process lies in our ability to recognize patterns of distribution. We recognize that spatial patterning of archaeological remains reflects the patterning of past activities. Since an artifact is a physical product of a total

cultural system, we can expect the artifact to present evidence about the perishable cultural parts of the system that created it. Changes in the cultural system will produce changes in the content of the archaeological record. By examining the correlations between the structure and content of assemblages and their spatial and temporal distributions, we can study changes in the culture that produced them.

## *Developing Research Questions for Different Levels of Inquiry*

Archaeologists are asked to understand and interpret recovered numismatic material in more than one way. The first, and by far most common, happens more or less immediately after some coins have been recovered, preferably in the course of a controlled excavation, but not always so. An identification of the numismatic material is needed for any site report along with any other contextual information that can tell us about the site and the people who lived there. Chapters 8 and 9 focus on the information usually needed for that level of inquiry.

More complex questions and research are usually proposed before or after the excavation at a single site is conducted. Such research involves building information up from individual sites into larger studies, and then using those larger studies to shape questions for future excavations and other studies. The range of circulation of a particular type of coin over a long period of time would be an example of such a question. Whether or not all areas within a larger governmental authority were adhering to the same monetary practices might be another. While large-scale or comparative studies can address different issues from a single excavation, they must be designed in a way that verifies and integrates information collected and reported by someone else, with all of the dangers that implies. Most larger or topical research questions can only be answered by using several different kinds of information acquired through the use of different methods and tests, and this is also true for archaeology.

Conducting research about a complex economic situation represented by a small number of numismatic artifacts can be a difficult. As a result coins and tokens are rarely the focus of research in the sites from which they were recovered; the numbers are usually too small for that level of attention. Also, there are very few North American archaeologists with training in numismatics (Lee 2006), so there have been fewer regional or topical studies than might have been the case if archaeologists knew more about how to use numismatic evidence. Until fairly recently an identification and description of the recovered numismatic artifacts unearthed from a site was often the only coin-related discussion included in the final report, and this information was rarely used in larger studies. Occasionally reports reach conclusions based on speculations about the significance of numismatic artifacts derived from their archaeological context, but too often such speculations are given more credence and weight than they should receive; This is due to a lack of testing of those speculations. Sadly, too much numismatic evidence ends up treated as singular finds or is only understood as representing a single behavior out of a possible use-life that may have included more than one function.

We can gain a deeper understanding of what numismatic evidence can tell us by looking at some of the most commonly recurring questions researchers hope to address with numismatic data. Once archaeologists are more aware of what can be learned from such evidence, it should be easier to formulate testable hypothesis to explain the meaning of the material in their site. Although the evidence for, and answers to, these complex questions overlap, they are examples of research questions that have been asked of and addressed by the authors:

1. Can numismatic evidence enhance other avenues of site dating, such as historical records, ceramic or glass identification, and so on? In what ways? Can it be used to date features or site components? Is it possible to date other objects found in direct association with numismatic material?
2. How do the recovered coins or tokens reflect historically known patterns of coin circulation through time? How did coin circulation reflect trade networks? What can changes in these patterns tell us about economic, political, or even ideological change?
3. How well was the economy meeting the needs of people? In what ways do the patterns of recovered coins or tokens reflect the economic circumstances of the site occupants or reflect social or economic class or gender of the site occupants or users? What can be learned about who had access to money, who didn't, and why?
4. What can we learn about the beliefs and worldview of a community or particular population by examining their money, especially when it is used for noncurrency purposes? What can symbols on coins and tokens tell us about political and economic interests and power in the society that produced the coins?
5. Why do we find coins and tokens used for nonmonetary purposes? How can we recognize such coins? What can nonmonetary uses tell us about the people who use coins and tokens for noncurrency functions? Why are importation dates, as compared to production dates, so important for material recovered in North America?
6. Can we recognize and understand the significance of the physical and social formation processes acting on numismatic material at any given location or group of related sites? These would include, but not be limited to, patterns of coin wear, modifications, such as holes, methods of deposit and storage, and the effects of human activity (agency), conscious and unconscious, that produce spatial patterning and patterns in site distribution. How does the practice of assemblage analysis help clarify patterns of formation processes?

If these examples sound like elaborations of similar research areas discussed earlier in the book it is because that is what they are. The process of answering the questions requires an integration of theoretical approach with methods of analysis that are then applied to a real archaeological find. Once we understand the kinds of information that can be extracted from numismatic evidence it is easier to develop research plans that include it. This is typical of the healthy dialectical relationship that should develop between evidence and research over time.

Part of the scientific method requires using accurate descriptions of recovered material and accurately describing the context

where it was found to build models of possible ways the numismatic material might have been used. If all archaeologists have a grasp of the same methods, underlying theory, and consistent nomenclature, it will be easier to find and use other models of artifact use and improve our ability to compare findings from one place and time to another.

## Comparing Documentary and Archaeological Evidence

As noted earlier, documentary evidence is spotty and one-sided, at best, for at least the first three centuries of colonial occupation of North America, and for much of the following "frontier" settlement period. Vivid examples of the differences in the historical and archaeological records exist for every region and period of time, and studying them will help both disciplines sharpen the focus of their future research and findings. Since the need to use archaeological evidence to supplement historical information is so essential to North American archaeology, examining how those lines of evidence can be used is a good place to start.

There are some generalizations about the lack of coins in many areas at different time periods that should be checked to see if that generalization holds whenever there is evidence available to do so. While it can be challenging to verify the shortage of coinage and other currency in areas where those shortages were anticipated, sometimes the assumed shortage of coinage needs to be tested. In analyzing this evidence, it is important to understand that coins that were withheld from circulation were often hidden, and finding a large hoard of coins does not necessarily mean that the coins were available for circulation at the time and in the place of the hoard's deposition. Finds of single coins that were dropped or lost from circulation are likelier to represent the circulating currency.

## Testing Documentary Records on Political and Economic Control

An example of how North American numismatic archaeology can supplement and sometimes contradict documentary evidence can be found in the study of eighteenth-century-French colonial Port Dauphin that served the settlement of Mobile (Shorter 2002). The settlement, established in 1702, was spread along the French colonial gulf coast and onto the Island of Dauphin. This area was settled by the French because it was an excellent location for controlling trade up the Mississippi River, as well as engaging in trade with ships of many nations as they passed along the coast. The analysis of the ceramics found in the area supports the notion that many ships were heading for the tremendously busy and wealthy Spanish cities of Veracruz and Havana, among others. This was trade that was not always sanctioned by the colonial offices in Spain and France. What does the numismatic evidence show when compared to the historical documents?

Several seasons of work at two sites, a village and a stockade, on Dauphin Island and the original settlement of what became Old Mobile, produced sufficient ceramic and numismatic evidence to contradict the lines of documentary evidence and long-held ideas about scarcity.

One problem that the French and British colonies had in common was a reported critical shortage of circulating currency, with all of the difficulties and inconveniences such shortages entailed. Letters sent back and forth between the French colonial *commissaire ordonnateur* and the representatives of the crown discussed a major lack of coinage. Often the case is made that such shortages put serious constraints on the general economy and the individual aspirations of colonists. However, in the case of the early French settlements along the Gulf Coast, the kind of documentary evidence supporting the idea of shortages of currency that is seen all over North America at the time is proven to be somewhat deceptive once the evidence, including numismatic artifacts, is analyzed. The recovery of many Spanish half-, one-, and two-*reale* silver cobs in all occupied portions of Dauphin Island and Port Dauphin Village, among other factors, argue for an economy that was more interconnected with both Spanish and Native American inhabitants of the region than the written record suggests. The archaeological evidence also helps to paint a picture of a small colony of only about 300 people engaging in unsanctioned trade, which is not reported in letters sent to France, and trying to survive without real support in the form of supplies.

Trade in the various colonies was almost always supposed to be limited to trade with homeland-approved partners. Certainly the letters and accounts prepared by colonial officers would all claim that such was always the case. Support for the struggling communities was limited. Supplies were not always sent as promised and the colonists needed opportunities to develop personal wealth that were not restricted by commands from home. The people of Port Dauphin and its surrounding communities created their own trade networks with friendly local tribes and with some of the ships that passed the area on their way back and forth to places such as Havana and Veracruz. Since these coins were the workhorses of currency at the time, it was clear that the cobs recovered from rooms or features related to Port Dauphin were lost in the dirt floors while being used for transacting business.

In addition to the cobs there were copper coins recovered from the areas representing the latest French occupation, such as the nine *deniers* produced in France for use in the colonies. The appearance of some coins manufactured in France, in this case, matches the letters from France that announce the impending arrival of French currency. The contrast between the written records and recovered material culture demonstrates that documentary evidence should never be left to stand alone. In this case, pleading letters stating profound shortages of currency are contradicted by the presence of both Spanish cobs, demonstrating their use in the area for conducting business, and French colonial deniers, although they were never plentiful in any part of the French colonies.

With its key role in economic activity, numismatic evidence is a kind of data that can offer a check against the conclusions drawn solely from historic records. On the one hand, claims made by the French authorities at home that French coinage would be sent to the colony were proven to be honored, although in a small way, by the recovered deniers. On the other hand, the rules that forbid colonists from setting up their own trading networks were obviously not honored as the colonists traded with outsiders for the materials they needed to support and enrich themselves. The paperwork may say "No trade with Spanish ships," but the sands of the Gulf Coast yield evidence to the contrary. And numismatic artifacts are part of that evidence. With this very simplified example it is possible to see documentary evidence supported in one case and contradicted by the evidence in the other.

## *Analytical Tools for Archaeological Investigations*

Analysis can be a complex and intimidating process, but once artifact functions are understood, the path forward becomes apparent. There are many tools useful in numismatic analysis, but the ones that we focus on in this chapter are the methods and tools used to understand the cultural processes in which the numismatic artifacts were used and moved. Context, function, use-life, formation processes, repurposing, lateral-recycling, assemblage and association, and ethnographic analogy are the vocabulary of analytical tools for numismatic archaeology in the twenty-first century. Using these tools is the way we move from simple identification to understanding the meaning of numismatic artifacts to those who used them.

## *Assemblages: A Flexible Organizing Principle*

In Chapter 8 we defined an assemblage as a contextually related group of artifacts that are found together in roughly the same location. While this is an adequate definition for most numismatic situations, it is necessary to point out that when archaeologists use the term *assemblage*, it can have a more flexible meaning when applied to different archaeological studies. What is meant by "found together" can vary from one excavation to another or by research project, depending on the investigation area and on the research questions being asked. The need to understand what humans were doing with the artifacts when those artifacts entered the archaeological record is just as important as defining the parameters of the place where an assemblage is found—its physical context.

Understanding the formation processes of loss is necessary for understanding the development of many assemblages. In Michael Schiffer's work on formation processes, discussed in Chapter 9, there are examples of how social factors, such as social stratification, ethnicity, and how children play, can result in patterned assemblages of lost artifacts (1987:72–75). It is fairly easy to imagine how and why different categories of artifacts end up in different places when they entered into archaeological context, especially in places with dirt or loose wooden board flooring. Imagination is good for developing hypotheses, but if scientific accuracy is the aim, it is always necessary to test hypotheses. Check the artifacts against similar finds in the area. It is usually possible to define an assemblage by looking at the areas where coins or tokens are clustered within a site or study area and determining some likely, testable, reason why they ended up where they were recovered.

Having been found in the "same place" is only part of the reason why some coins are considered an assemblage. For example, if a building was used as a residence and as a store in the Dutch settlement of New Amsterdam, but the building later came under British colonial control, we can imagine quite an array of coins being lost under the floorboards. Sometimes before and sometimes after archaeologists eventually excavate that floor, they have to determine which coins go together as assemblages for analysis. They may try to see what overall changes were going on in the building while it was occupied by grouping together all of the coins found within the building footprint and use stratigraphic levels of the area with assemblages divided into units according to depth. The obvious and well-documented change in the population will be visible when the assemblage of the material found within the footprint of the entire building is analyzed as layered and meaningful assemblages of "place."

If the purpose of a study of the same building site were to focus on trying to see who occupied the rooms and what the rooms were used for, they would probably begin by sorting the complete recovered assemblage into smaller assemblages on a room-by-room basis. The human activities and behavior that took place in different rooms of the building resulted in different deposits of artifacts that varied. Such an investigation might make some aspect of daily life, some cultural process, more apparent. The same material sorted in different ways provides different kinds of information. It may be easier to define possible formation processes for a single coin than it is to figure out what formation processes acted on large assemblages, but large assemblages can offer more information.

### Assemblages and Artifact Function

Coins and tokens are rarely found in the ground because they were discarded, broken, or abandoned. Numismatic material gets repurposed or lost and is less likely to be recovered from trash pits or other places where other objects were obviously thrown away. This is not surprising; they are often made of valuable metals and are embodied with many symbolic meanings. These features of coins and tokens do not change and are not the kind of content that is willingly discarded. When numismatic artifacts are recovered, it is often because they were lost while still being used for either monetary or nonmonetary purposes. Coins and tokens lost under floorboards were in the room in the first place because they were being used in commerce, as payment for work, for gambling, or any one of several other uses. By determining what was going on in the room when the coins dropped between the floorboards, we are able to understand more about the culture of the people who dropped those coins. We can learn more about the past from an assemblage than from an individual coin because an assemblage is the result of social activities that brought the material together.

Often the tokens and coins can help us understand new things about the overall systems of behavior in which they were embedded, by using ethnographic observation of how similar material is used in related or similar societies in recent times and through the study of historical documents. There is even more to be learned from examining how numismatic material was used in situations in which it was converted to nonmonetary functions. This was certainly the case for the Asian coins recovered in the American West.

Functionally related assemblages, consisting of groups of coins and tokens that are brought together by similar activities and end up entering the archaeological record together, can be used for some dating purposes. Also, the underlying causes of change in coinage are sometimes reflected by the presence or absence of particular coins.

By combining the information from several assemblages with ethnographic observation, historical records, and a systematic review of coins recovered from other similar archaeological sites, increasingly better models of human activity can be produced and tested. This process is one of the initial steps in the behavioral systems approach, and it can sometimes be used in ways that allow fine-grained dating of features.

### A Few Cautions

Numismatic evidence is sometimes simply misused as dating evidence. When a coin or token is recovered from a secure archaeological context, it can feel like a very solid piece of evidence, like

finding the date inscribed on the cornerstone of a building's foundation. However there are many complexities that need to be considered before using the production date on a coin for dating purposes, especially if there is only one coin. Finding a very old coin in an unexpected place and using the date on it to claim that someone was at that location around the time when the coin was produced is a common mistake. Coins, much like any other pieces of material culture, can have long and complex use-lives and can be used and reused for a long time before they become part of the archaeological record. The date a coin was made can be hundreds of years earlier than the date that the coin entered the archaeological record for the last time before it was recovered. Recovering a Chinese wen from the Kāngxī reign (1662–1722) from an Alaskan site does not mean that Chinese ships and explorers arrived on the Alaskan scene during that reign.

Many coins circulated in China for hundreds of years prior to the time they were exported to the eastern side of the Pacific. Claiming Ming dynasty exploration on the basis of a Ming dynasty coin is a surprisingly common mistake. The danger of over simplifying the use of the production date of any coin or token is real, and that fact should be always be in the back of the mind of any archaeologist, numismatist, or collector who uses numismatic evidence to date anything.

## More about Hoards: A Special Kind of Assemblage

Hoards are a valuable source of information for archaeologists because of the volume of material they represent and because of their special characteristics, as briefly presented above. A few examples of how archaeologists have been able to use hoards to interpret behavior in the past is all that can be presented here, although there is enough literature on the topic to comprise several massive volumes.

In the Old World, the amount of numismatic material recovered from hoards that were uncovered by accident far outstrips the amount recovered individually in systematic excavations. In Britain, for example, over 1,400 hoards of Roman coins had been found by 1975, but only 10 percent of these had been recovered as part of the excavations of Roman occupation sites (Robertson 1974:12). If anyone is attempting to keep track of the total number of hoards recovered anymore, the count must be in the tens of thousands, as metal detectors have become available to the general public. Old World archaeologists have worked out simple yet effective methods of hoard analysis, as well as some very sophisticated predictive modeling. People in Europe were using coins for thousands of years before secure banking was available. Similar practices were commonly used by Euro-Americans up until banks became safer some eighty years ago, and some families and individuals continue similar practices today.

## A Tale of Two Hoards

Hoards can represent very different activities even if they just look like coins in some kind of a container when they are removed from the ground. Two hoards are discussed below. One consists of Chinese and some Vietnamese wen recovered from the ruins of an old building, and the other is part of what has become known as the Saddle Ridge hoard, a multimillion dollar find of gold coins. Although there is a surface similarity, both hoards were recovered in damaged containers, and they were found very close to the surface and in places that suggested they were deposited within a decade or two of each other. What activity were the coins in each hoard intended for before something happened, and they were separated from the owner?

**Figure 10.2.** The Saddle Ridge hoard of gold coins in metal cans. Photo: Kagin's Inc.

The Saddle Ridge hoard, which was globally reported in 2014, consists of a large number of gold coins found buried in metal cans in the Gold Rush country of the Sierra Nevada foothills of California. The couple who found them, whose names have not been released to the public at this point, reported that they found the first cans of coins on their property near a path where they walked daily. They took the coins to well-known coin dealers Kagin's Inc. for analysis and possible sale. The Saddle Ridge hoard was widely reported because of the overall value of the gold coins and because the hoard included some rare and high value pieces. Ever since it came to public attention, there has been much conjecture about the actual origin of the coins in the hoard, the identity of the original owner, and the possibility that the find was composed of stolen goods. Most of the speculation appears baseless. Most of the theories are disproved by the actual contents of the hoard, and all we can reasonably conclude is that someone hid the coins roughly a century ago and died before retrieving them.

The jar of coins recovered from an area occupied or used by some Chinese or Chinese American residents of San Bernardino did not set off headlines when it was recovered, although it appears to be the largest hoard of Asian coins recovered in North America to date. The lack of news coverage was not surprising to numismatic archaeologists since not only was the value of the coins themselves very low, but also because similar although smaller hoards have been encountered elsewhere. The function of this hoard was pretty clear from the beginning; it was gaming equipment consisting of wen and dong that were often used as game pieces associated with dice, dominos, and small glass game markers. There was no question about who owned the coins. Caltrans owned the property where the coins were found, and there were records of who owned the property before Caltrans bought it. No worldwide press coverage needed here.

Almost the opposite can be said about everything surrounding the Saddle Ridge hoard. All of the initial coverage of the find made mention, often in the headlines, that the owners found the hoard *on their own property* (*Los Angeles Times* Feb. 27, 2014: AA1). Under US law artifacts found on personally owned property belong to the person who owns the property. If the coins were found on the couple's property, there isn't a

**Figure 10.3.** The San Bernardino hoard of Asian coins.

requirement for the coins to be reported to any government agency. Prices for the coins were set and advertised as part of the process of conserving and preparing most of the material for sale. Premium prices were set for the coins because of the general public's interest in "historic hoards."

David McCarthy, who worked on the material, spoke with one of the authors at the Long Beach Coin Show (David McCarthy, personal communication, June 6, 2014). When asked about the archaeological provenience, McCarthy reported that there was no meaningful contextual information regarding the location where the coins were found. He said that the coins had been buried in unmarked cans, and nothing else was found with them. When asked about cooperating with archaeologists, McCarthy said he was open to it, and he generously agreed to send original high-resolution photos of what some of the cans looked like before the contents were removed. He also provided a booklet prepared for potential buyers that listed the "complete census" of the coins, including date of production and grade as assessed by PCGS, specialists in grading numismatic specimens (Kagin and McCarthy 2014). The booklet's list of coins in the hoard did not include an indication of which coins were in cans with each other or any other sorting mechanism. The information in the booklet's "census" of the coins indicates that it was prepared for coin collectors; the key information included is coin type and grade.

Although the booklet reports that owners were used to finding evidence of the past on their property in the form of old nails, cans, and tools, there is no mention of anything being found in association with the cans of coins, no markers, no tools, nothing. It needs to be pointed out that the property owners are the people who set the tone and condition of sales, not the dealers.

Some have stated that the minimal information on where the coins were found prevents anyone from returning the hoard to the family of the original owners (Wartenberg 2014). In Europe, where hoards usually have to be reported to government agencies, forensic methods have been developed to find the original owners of hoards, or their descendants, and some hoards of stolen material have been returned to the proper owners. This is one of the reasons why skepticism continues about the "origin story" of the find, because such steps are not known to have been taken with the Saddle Ridge hoard. On the other hand, the way the hoard is reported to have been handled did not violate any California law, and it is quite understandable that the property owners would want to avoid having legions of treasure hunters digging up their land by flashlight every night. For a banking hoard to have been placed in sterile soil at some distance from a habitation is not unusual, and in fact is quite common.

A review of the two hoards, one consisting of valuable gold coins and the other containing inexpensive Asian coins, indicates that they were intended for entirely different purposes. We will probably never know if the Saddle Ridge hoard was a hiding place for money legally earned and salted away, or the hidden profits of some illegal activity. The coins were hidden from any daily activity that might have inadvertently revealed their location. We don't know if the coins were buried once and left alone thereafter, or if the depositor returned several times to add or subtract from the stash. Archaeologists are often able to determine whether or not something has been reburied and how often, but they would need to see where the coins were recovered to determine such activities.

The San Bernardino hoard was very different in function. The coins were recovered from what had been an active area but off to the side of the room where they would be close by if needed—out of casual eyesight. A similar out-of-sight, but close, proximity to daily activities location has been used for a great many functionally similar hoards. The material found with the coins, and the coins themselves, tell us they were used as game pieces for fan tan and other related games. While the Saddle Ridge and the San Bernardino hoards bear a striking resemblance to each other at first glance—coins in containers recovered from hiding places—one functioned as a bank or a hiding place, and the other was just part of very common gaming equipment.

The instructions in Chapter 8 for properly describing coins and tokens using traditional numismatic parameters and descriptive language would be a good start for anyone who works with recovered numismatic material, no matter what method was used to remove the material from its context. If the inventory of information listed in Chapter 8 is completed before the pieces in a hoard are dispersed, there would be some record of what was found and where it was found, even if a recovered assemblage or hoard is broken up for any reason. It is very easy to store a spreadsheet and photos of a find, and the support of a well-financed institution capable of storing coins themselves is no longer required in order for people to collect and share information.

Creating a spreadsheet of the various attributes of coins and tokens recovered anywhere is a simple matter. The characteristic and attributes that need to be recorded are all in Chapter 8, although different regions and time periods may require adding some characteristics to the spreadsheet matrix.

In the 1980s and 1990s a paper record sheet was essential in data collection in part because there weren't many laptop computers and because museums and libraries, among other organizations that curate artifacts, did not allow laptop computers into the places where the artifacts were examined. Spreadsheets are easy and inexpensive to store, in hardcopy and electronic form, on electronic media, or even moved into the digital cloud. If completed using standard numismatic terminology, the information can easily be moved any time the artifact is moved, including information that can be used in future research. Having material that has been or can be used in a research project adds interest and value to their holdings, at least as far as most collectors are concerned.

YAKUTAT

Collection 49 YAK 020 SHALLOW WATER TOWN Curator STANLEY D. DAMS, USFWS Date examined 3 APRIL 1988

LATER: UNIV. ALASKA MUSEUM, FAIRBANKS

| Master List Number | Country of Origin | Mint | Mint Character (Chinese) | Mint Word (Manchu) | Reign Name | Date | Metal | Diameter | Denomination | Condition | Provenance and comments | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 - 001 | RUSSIA | YEKATERIN-BURG | – | – | CATHERINE II | 1764 | Copper | 41 mm | 5 KOPEK | G | Feature 2, vertical between floorboards at 147-153 cm. 87.1062 | Craig 59.3 |
| 200 - 002 | SIBERIA | KOLYVAN-VOSKRESSENSK | – | – | CATHERINE II | 1788 | Copper | 29.5 mm | 2 KOPEK | F | Feature 2, 149 cm 87.52 | Craig #4 |
| 200 - 003 | CHINA | (Peking) | – | missing, but word boo present | KANG HSI | 1662-1722 | Brass | 27mm | WEN | F, broken | Feature 7 2 cm 87.575 | Schjoth 1419 1421 |
| 200 - 004 | CHINA | BOARD OF REVENUE, PEKING | – | | YUNG CHENG | 1723-1735 | Brass | 25 | wen | VF | Feature 7 20-30 cm 87.1220 | Schjoth 145: |
| 200 - 005 | CHINA | NINGPO, CHEKIANG | | | KANG HSI | 1662-1722 | Brass | 27mm | WEN | VF | Feature 7 34 cm 87.225 | Schjoth 1433 |
| 200 - 006 | CHINA | BOARD OF REVENUE, PEKING | – | | KANG HSI | 1662-1722 | Brass | originally c.25 mm | WEN | Poor | Feature 9 90-100 cm 87.1499 | Schjoth 1419 |
| 200 - 007 | CHINA | LINCHING, SHANTUNG | obliterated | | KANG HSI | 1662-1722 | Brass | 26 | wen | Fair | Feature 12, 60-70 cm wooden peg through center hole 87.1735 | Schjoth 1425 |
| 200 - 008 | CHINA | KUELIN, KWANGSI | – | | CHIEN LUNG | 1736-1795 | Brass | 24 | Wen | G | Feature 12, 84.5 cm 87.1404 | Craig 18.1 |
| 200 - 009 | CHINA | (Peking?) only 15% of coin | – | word boo present | (Kang Hsi ??) | | Brass | originally c.29 mm | wen | poor, broken | Feature 13 110-120 cm Fragment, c. 15% of coin 87.1627 | boo/ tie |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Margie Akin, Department of Anthropology, University of California, Riverside, California 92521-0418

**Figure 10.4.** California Asian Numismatic Survey record sheet for coins found at Yakutat, Alaska, that were examined in 1988. Two Russian coins were found between and under floorboards in a separate feature from the Chinese coins.

## *Ethnographic Analogy*

Ethnographic analogy takes what begins as identification and description of artifacts to the possible assignment of function by comparing archaeological evidence to ethnographic examples of the same objects, or from ethnographic observation of human activities. Instead of looking at the role of a coin or token in a particular site or situation, ethnographic analogy examines the role of an entire class of objects within an entire system of human behavior or activity. It is one of the main tools used to build behavioral systems models to identify and understand numismatic material culture within a larger cultural activity. When the material remains of contemporary cultures or historical documents that describe them match the material remains recovered from the past we can assume that related practices and beliefs are also similar. However, it is important to add that any conclusions drawn from the similarities between the past and the present must be tested against similar data from other places. Since archaeology is the anthropology of the past it is easy to see that ethnographic analogy can help bridge the two through comparative studies of their respective material cultures.

We can improve our understanding of the use-life cycle of coins by observing and recording current behavior that incorporates their use, such as the reasons why different types of holes are made in coins. The reasons people save small change today, as well as the places they use to store it, can be used to develop models of what the material remains of that behavior would have looked like in the past. It is even possible to devise experiments to learn about how much trouble people will take to recover a lost coin.

We can project this process into the future to see how ethnographic analogy might work from the perspective of people who lose coins. In this case the factor to look for is one that is related to a sharp increase in the value and number of coins left in the street. A recent observation made by a retired ornithologist, Roger Pasquier, and reported in the *New Yorker Magazine* (Thompson 2015) suggests that a new factor is impacting the retrieval rate of coins that are dropped or lost on the sidewalks of New York and presumably some other places. Pasquier, who has been collecting and carefully recording the coins he finds in the street for years, found that the overall value of coins that nobody else bothered to pick up in his study area has almost doubled since 2007. That is an increase much larger than the inflation rate. What does he think is the reason?

The introduction of a new technology, the smartphones introduced that year, had people looking at their phone screens instead of where they were walking, leaving more change on the ground. Archaeologists in the distant future who might find a change in the assemblage of coins representing New York streets could ascribe it to inflation, economic collapse, or any of a host of possible causes for the change. However any researcher looking at New York street culture or images


**Figure 10.5.** Smartphones reduce pedestrian coin retrieval. Illustration by Ian Akin.

of street scenes of New York in photos and films will see the difference in where people are looking while they walk. Ethnographic analogy is often an excellent way to see how people behaved in the past.

We can find evidence such as styles of artifact modifications and then compare those modifications to ethnographic examples. Occasionally old photographs can also demonstrate how coins were used to get a better understanding of what past coin modifications mean in terms of human behavior. For example, making jewelry out of coins is a very common practice around the world. In some cultures the coins are sewn onto clothing. Sometimes they are suspended from a string; and sometimes they are linked together in a chain. If we look at how this is done by examining ethnographic items incorporating coins, we can understand how coins could have been attached to clothing even if the threads have rotted away.

We can expand our knowledge of people's behavior in the past because it is represented and expressed by the material remains of its behavioral systems and cultural processes. When the material remains of more current cultures match the material remains of the past, we can assume that related practices and beliefs were in place at both times. We can assume that the behavior will vary with the value of the coins and the relative prosperity of the people who lose them. But what other factors are involved? Banking procedures also affect the cycling of coins and often define when a coin is pulled from circulation or when a new type is introduced. Who, or what agencies generate the banking guidelines that define this behavior, and what are the reasons for them? We must be able to address these questions for our own contemporary society, and other cultures, in order to formulate questions and understand parallel processes in the archaeological record.

Ethnographic analogy can be a powerful tool for defining the function of artifacts, but it is not without its pitfalls. It is one thing to know that it is a common practice to drill holes in coins in order to suspend them from a cord or chain as jewelry, but it is incorrect to assume that coins with holes were always used in such ways. It is possible to formulate a larger list of testable hypothesis by consulting studies that present a wide array of uses of the numismatic materials in the present and the past. In the case of holes in coins there is a recently published study of coins with holes in them that were sold on eBay that would be helpful (Lees and Beck 2007). Sometimes consulting comparative collections of similar material can serve the same purpose. For example, the Asian American Comparative Collection, currently maintained at the University of Idaho (http://webpages.uidaho.edu/aacc/) would be helpful to anyone studying Asian coins recovered in North America.

## *Beliefs can Drive the Behaviors Reflected in Material Culture*

Knowing the context of artifacts is essential to understanding what the artifacts can "tell" us. Sometimes we can combine what we know from context with documentary evidence and ethnographic information to determine what we should seek as contextual evidence. This can mean looking in at least two places: either examining already excavated materials from the same site, or in the remains of other sites, those already excavated and ones to be excavated in the future. Sometimes what we find in similar ritual contexts in widely different settings can give us information about the underlying beliefs supporting activities that took place in those contexts. Bent coins are known to be part of several systems of belief; often they are included in charms that are hidden in walls and other significant locations (Cofield 2014).

## *Votive Deposits, in Their Wide Variety*

Since long before coins, valuable objects have been deposited in lakes, streams, wells, and fountains, under or in significant portions of buildings, in trees, and in a host of other locations. The development of coins as objects of value and means of exchange expanded the ways valuable objects were deposited, and both the behavior and the ideology connected with the behavior has changed many times over the centuries. Understanding how this behavior has changed can help us look for further examples and lead to improved understanding of ritual deposition of coins.

The earliest known behavior involving ritual deposition of coins involves their placement under or within parts of buildings. Some of the very earliest coins from the area of ancient Lydia and Caria were found deposited under the Temple of Artemis at Ephesus, built about 600 BCE, together with other valuables. Ritual deposition of valuable objects under temples and public buildings appears to have begun in the Near East, then spread to Greece, and then to Rome (Hunt 2006). It was practiced by adherents of ancient Mesopotamian religions, of the Greek and Roman religion, of the traditional Egyptian religion, by Jews, and later by Christians as a continuation of Roman practice. Ever since, the custom has continued, particularly in countries that were part of the Roman Empire or settled by people from those countries, and coins have been found under doorways and cornerstones of buildings erected by European settlers and their descendants in many places in North America.

The practice was continued by stone-masons, from whom the modern Masonic societies adopted some traditions. During the 1700s through 1900s, many such coins were deposited as part of Masonic ceremonies accompanying the construction of buildings with public uses, though such Masonic ceremonies

are not known at small private residences. George Washington is one of those known to have participated in such ceremonies. During the latter part of the 1800s, some of the ceremonies were very public and were noted in newspapers, sometimes with lists of the deposited material that was usually placed inside a hollow space in a cornerstone. Current coins are almost always included in time capsules.

A particularly well-documented example from 1894 is included in the *History of the Naval Lodge*, No. 4, of the Free and Accepted Masons in Washington, DC (Harper 1905:55). The list includes twenty-three groups of objects, including a commemorative Columbian half-dollar from the United States from 1892 or 1893; a Chinese coin; a set of US coins from cent to dollar, dated 1894; two aluminum Masonic medals from the Columbian Exposition at Chicago; and "several old copper coins." The lodge building is still in use.

An archaeologist involved in the excavation of a large or public building should expect to find some evidence that coins or other valuables were placed under the building or inside the walls during construction. The evidence may not be coins, but it may be a hollow spot in a cornerstone, or a previously excavated spot under a foundation stone. As the practice is widely known, the coins are often removed, officially or unofficially, from a building that is taken out of use.

Coins have been placed under masts and mast steps of watercraft at least since early Roman times and are still deposited in those locations today (Carlson 2007). Technical changes to the vessels have not deterred the depositors; all-metal, US Navy ships all have coins under their mast steps (the masts now used to hold electronic equipment rather than sails), and they are generally soldered in place.

A review of hundreds of blog posts by amateur sailors mentioning this practice shows that there are currently many explanations for it that prescribe many different kinds of coins, and claim many different origins for the custom. Some say that a silver coin is required and some say a bronze or copper coin. Some require that the coin show a sailing ship (as do British halfpennies from 1937 to 1967 and Canadian ten-cent pieces from 1937 to today) and others that the coin must bear the date of the current year when the mast is stepped. The custom is seen as a guarantor of good luck (or at least a deterrent to bad luck), as a respected tradition that honors mariners of the past, as a favor to later owners of a boat who can tell by the coin's date when the mast was last replaced, and as a fun ritual that unites the sailing community. In the ancient past, the use of coins showing particular deities tends to indicate a religious connection, and today some Christians are careful to use coins that include crosses in their designs. One reason it is hard to ascribe a particular motivation to the performance of a ritual of this nature is that different people may have different motives, and the motives of a single individual may be mixed.

Whatever the motivations, mixed or otherwise, this behavior has been common in North America since Europeans arrived, as well as in much of the rest of the world. Any archaeologist who works on the remains of a vessel of whatever size should be careful to examine the mast step area and look for signs of this practice. Similarly, any archaeologist who works on a site where a fountain, a pool, a fish tank, an open cistern, or a natural or artificial pond may have existed in the past, needs to be alert to the possibility that coins may have been deposited in the water at some time, by someone.

**Figure 10.6.** Ella Akin of San Francisco throws coins over an ancient Egyptian crocodile into a pool at the New York Metropolitan Museum of Art, June, 2015.

A related kind of site, not known to the authors to have been reported in North America, most likely does exist somewhere on the continent. Across Great Britain and Ireland, there are hundreds of "coin trees," where coins have been inserted into cracks or hammered into bark or underlying wood of living or dead trees. Ceri Houlbrook has studied 237 individual trees, with from as few as one coin (and other objects, such as nails, pins, and rags) to one with over forty thousand coins. Several sites are well-documented from the 1700s and reputed to have been old at the time, while others were established as recently as the year before Houlbrook visited them. The earliest known reason for making coin offerings at these trees was to ask for healing. In these days of the National Health Service, the 219 people Houlbrook interviewed after watching them contribute to the coin deposits all cited other reasons, such as good luck, wish fulfilment, observance of tradition, or simply imitation of others (Houlbrook 2015).

The lack of reports of coin trees in North America may simply reflect a lack of knowledge of the practice among archaeologists. A few coins in a tree may not have been considered of significance, or they may have been assumed to represent some other behavior. But as rural English, Scottish, and Irish immigrants were a key component in the population of the Thirteen Colonies, as well as more westerly states, and in Canada and even parts of Mexico, it seems likely that this rural tradition was at some time and some place practiced here as well. Those who analyze coins found at archaeological sites should keep this in mind as a possible behavior in North America.

# Shipwreck Archaeology and Coins



Underwater archaeology covers a broad field. One aspect includes former habitation sites that are now under the water. The older of such sites are underwater due to global warming at the beginning of the current interglacial period, some 12,000 years ago. More recent oceanic immersions are due to earthquakes and lowering land levels (as at Alexandria in Egypt and Port Royal in Jamaica), changes in lake levels, and human-caused inundations behind dams. Another subcategory involves accidental or intentional deposition of artifacts along seacoasts and lakesides, including trash disposal and the erosion of building sites that were once in close proximity to waterside cliffs. The largest numbers of artifacts recovered, including spectacular artifacts that had high value at the time they went under the water, are found in shipwrecks.

While glacial period sites are fascinating and important, they are from long before the invention of coins. Underwater deposits resulting from trash disposal and waterside erosion, while they often include coins, usually do not differ greatly from similar sites on land. The coins are of the same types found on the nearby land from the same periods. The main difference is in the need to treat the artifacts like others found in salt water, or in fresh water in the case of lake or river sites.

## Shipwreck Archaeology

The most numismatically important underwater subfield is shipwreck archaeology. Shipwrecks differ in some basic ways from most sites found on land, as a ship is a floating social unit with its own structure, governed by distinct customs that have changed over time, and the artifacts found in a shipwreck are almost never the result of intentional or careless deposition at the end of their use-lives. A shipwreck contains the artifacts that were in actual use or actively being transported from one port to another at the time of deposition. The artifacts were not deposited over a period of time, but were all deposited together at the same hour on the same day. As in a building flattened under a landslide, or a house in Pompeii, the artifacts show few or no signs of selection and often represent the entire range of artifacts present at the time of the disaster.

We think of ships and boats as serving several distinct functions. Some, particularly smaller craft, are used for recreation. Many more have been used for fishing, though larger vessels are now included in fishing fleets. Ferries, normally with short runs, are for the transportation of passengers and their means of land transport (whether carts and horses or oxen, or automobiles). Larger passenger ships carry immigrants across oceans, or cruise passengers to tourist destinations. Cargo ships range from smaller vessels carrying luxury goods short distances, up to large ships that carry very large cargoes across oceans. And military vessels are the most varied of all, carrying cargo, military personnel, and weapons on long or short voyages covering the globe.

The uses of a particular ship may change over time, depending on circumstances. During World Wars I and II cargo ships often added guns on their decks and military personnel to their crews. Most reverted to purely civilian use when peace came, as has been the case with thousands of vessels after hundreds of wars. In fact, every kind of vessel has been impressed into military service during wars and emergencies, and this has been true for millennia. And from canoes to aircraft carriers, some have gone to the bottom, particularly during wars, and become objects of interest to underwater archaeologists.

In the waters of North America, shipwreck finds are much more limited than in the Mediterranean or the South China Sea simply because shipping is more recent here. The two world wars left thousands of craft on the seabed but relatively few in North American waters. There are some concentrations of them near some East Coast ports, along with the German submarines that sank them and in turn were brought down by Allied forces. But otherwise, military wrecks tend to be older, and they include some Civil War shipwrecks near the Atlantic Coast, a number of wrecks (American and British) from the War of 1812, including many in the Great Lakes, and a smaller number from the American Revolution.

**Figure 11.1.** Oliver Hazard Perry leaves his flagship the USS *Lawrence* during the Battle of Lake Erie, 1813. The USS *Lawrence* was raised from the lakebed in 1875 for exhibit at the 1876 Centennial Exhibition in Philadelphia, where it was destroyed by fire. Painted by W. H. Powell, engraving by T. Phillibrown, 1858.

Prior to that many military vessels and cargo vessels that were often part of the same fleets went down in hurricanes and other storms along the Caribbean and Atlantic coasts during the seventeenth and eighteenth centuries. Most of these ships were Spanish, and a few of them carried major cargoes of gold and silver from Mexico and other mints intended for Spanish destinations. Generations of treasure hunters have dreamed of wrecks from the Spanish "treasure fleets," and a few have found them. Far fewer treasure ships fell victim to pirates and enemy fleets than to storms, but enemy action also sent some ships down to the seabed.


**Figure 11.2.** *The Wreck.* Illustration by William James Linton, 1877.

Cargo ships are also lost in storms, and some are lost to other causes, including fires, boiler explosions, and bad seamanship. In the days before modern navigation equipment, quite a few came to grief on rocky shores. Adding up all the shipwrecks yields some very large numbers. For example, there are more than 8,000 wrecks in the Great Lakes alone (Bowers 2008:63). Most have not yet been recovered. Relying on data published by Garrison, Pearson, and others, Amy Borgens estimates that there are some 4,000 wrecks in the Gulf of Mexico, with some 75 to 80 percent within 10 km of the shore (Borgens 2011:660). The estimate for the Gulf of Mexico appears to be based on a somewhat larger vessel size than that for the Great Lakes. Each authority puts the dividing line between ships and boats at a slightly different place in the size continuum. The current UNESCO estimate of the number of shipwrecks on the ocean floors of the world is three million, though UNESCO cites no sources (UNESCO n.d.).

In numismatic studies, we can divide shipwrecks into three major categories. The first and rarest is the treasure ship, which may be from the Spanish treasure fleet, or from a French, English, or Dutch ship that acquired much of the cargo of a Spanish ship. Most of the value of a treasure ship's cargo is in gold or silver coins or ingots. Some large multiton cargoes of gold and silver are still transported by ship, but generally speaking most such wrecks date to World War II or before. The most recently recovered was the *SS City of Cairo*, torpedoed in mid-Atlantic on the way from India in late 1942. It carried over 100 tons of silver coins reportedly belonging to the British treasury, that ended up at a depth of 5,150 m. The British government and the recovery firm Deep Ocean Search recovered the treasure in secrecy in 2013. In an astonishingly bad decision, the government required that the coins all be melted and sold for bullion for some fifty million dollars. Had they been sold as certificated shipwreck coins, they would have brought millions more on the market. Not until the entire transaction was completed, and the next parliamentary election was days away, was the secret revealed in April, 2015 (*World Coin News*, June, 2015).

The second category is the cargo ship with a smaller cargo of coins, along with many other kinds of cargo and some passengers. By weight, the coins may amount to a few hundred or a few thousand kilograms, with a scattering of coins among the effects of the passengers and crew as well. An important wreck in this category was the *SS Central America*, lost in a hurricane off North Carolina in September, 1857, while headed to New York from the Panamanian port of Colon. With only 206 rescued, about 425 passengers and crew were lost. Many of the passengers were from California, and the cargo included about 13,000 kg of California gold, enough that its loss helped spark the Panic of 1857, a major financial crisis. After the wreck was found in 1988, recovery efforts took years, and some large gold ingots and 7,500 gold coins were recovered. Also recovered were various silver and other coins carried by passengers and crew members. Among the important numismatic data from the wreck was confirmation that the fractional quarter- and half-dollar gold pieces of

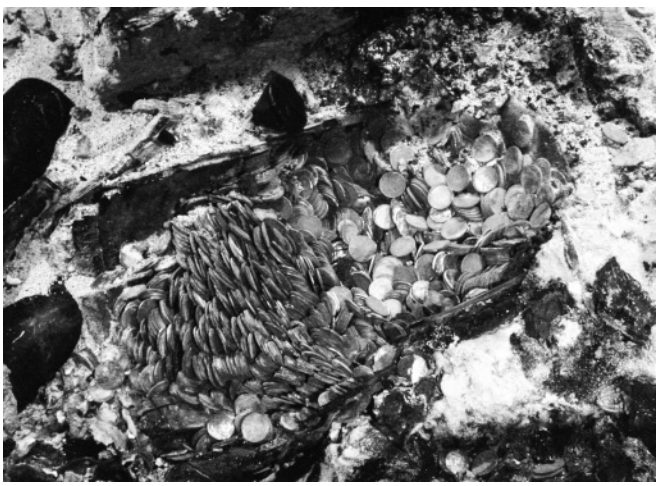

**Figure 11.3.** Half-dollars from kegs carried on the SS *Republic*, as found on the ocean floor. Photo Odyssey Marine Exploration, 2003.

California, found with other circulating coins in the effects of passengers, were in actual use as late as 1857. Due to legal problems the recovery was shut down for two decades. Work at the site resumed in 2014, and some 15,500 gold and silver coins and 45 gold bars have been recovered.

Another commercial ship with tens of thousands of coins included in the cargo was the SS *Republic*. She sank in a hurricane in October, 1865, on a voyage from New York to New Orleans. While most of the passengers and crew spent two days in lifeboats and survived, the coins and other cargo went to the bottom in 500 m of water some 160 km off the Georgia Coast. The SS *Republic* was found and salvaged in 2003 (Bowers 2009).

The third category is a ship that was not carrying an actual cargo of coins, but on which passengers and members of the crew had some coins, some of which may have been stored in the purser's safe and some among their luggage or on their persons. This category includes the vast majority of shipwrecks. Shipwrecks with no coins at all either date to before the invention of coins, or are of very small vessels none of whose crew happened to have any coins at the time of the wreck.

It is sometimes difficult to date a shipwreck, especially when the wreck is dispersed and only partially recovered. For armed ships of the last 400 years, the guns may be the key to identification, as large guns are relatively easy to identify and date, and military files often record just which guns were on which ships. But coins are often important in dating wrecks, with the coin with the most recent date giving a terminus post quem, a date after which the wreck must have occurred. The coins may not help in sorting out the wrecks from a specific multiwreck event, such as a storm or battle, but they can help distinguish a wreck from 1672 from one that went down in 1715 near the same spot.

Many wrecks, when first found, are of completely unknown date, and coins can be a big help in such cases. One recent example is the "Mardi Gras" wreck that was discovered during undersea oil exploration and explored only by remotely operated vehicles. In addition to a broad range of other artifacts and some guns, two coins were found in the rather hurried work at the wreck, one a Mexican coin dated 1808. The other artifacts had suggested a sinking date between about 1800 and 1820. Cutting that date range in half with the coin enabled archaeologists working for the Minerals Management Service to focus on the War of 1812. They announced in 2009 that the wreck was tentatively identified as the US privateer "Rapid," which sank off the coast of Louisiana in 1813 while eluding a British naval vessel (Ford, Borgens, and Hitchcock 2010:95).

Ownership of a wreck or its cargo is often a big question. When a wreck is entirely within the waters of a specific state or country, the question can usually be sorted out in a matter of months, or perhaps a few years. When the wreck is in the middle of an ocean, the legal questions can get really interesting. Some of the people who have or claim an ownership interest in wrecks include national governments, state or provincial governments, insurance companies (and, in the case of centuries-old wrecks, their successors), owners of ships and cargoes or their heirs, owners and crew members of ships involved in salvage, discoverers of wrecks, investors in salvage ships and treasure-finding firms, and the creditors of all the above. National governments, that can pass their own laws to give themselves ownership, have an advantage, though sometimes two or more governments have conflicting claims. And lawyers, of course, often end up with a good share of the wealth of all parties involved.

This all provides a tremendous incentive for discoverers of treasure to simply take it, without mentioning it to any authorities. While of course no statistics are available, this is understood to happen fairly often. But this path is usually available only to discoverers of wrecks in shallow water, who do not need a large salvage operation. In such cases, the little that numismatists may learn from the coins is found at the time they are sold to dealers or come up for auction. When such a coin is of a previously unknown type or date, or is rare enough that all examples are known to experts, it is examined and recorded, but all contextual information is lost. Do not suppose, however, that the only alternative is to force such coins to be turned over to some sort of authority, or placed in a museum. A very real alternative is for the discoverer to melt the coins, entirely destroying all information that might be gained from them, and sell the gold or silver as bullion. In the view of many numismatic scholars, there is something to be said for a bit of laissez-faire in such matters.

For some perspective on the whole question, it is important to understand that most salvage of sunken ships is done to recover bulk materials (bulk cargoes, ship's timbers in earlier days, and scrap metal more recently). Coins are almost always a small incidental part of anything recovered, and have not been an important consideration to those who create maritime laws.

Unless specific laws require it, archaeologists have no voice at all in the decisions made about shipwrecks. And because the international laws of the sea are made through agreements between powerful governments and the wealthy corporations that often guide them in their decisions, no one without great wealth or power has any say in their drafting and adoption. Pressure from public opinion, however, can have some influence on governments and on corporations as well.

In Europe and the Eastern Mediterranean, many countries have laws that put wrecks, or certain kinds of old shipwrecks, in the hands of entities that employ archaeologists, including museums, government ministries, and universities. Examples include Italy, Greece, Turkey, and Israel. In North America, some of the states of the United States have such laws, though they are not always fully followed, and federal law can overrule state law, with both subject to international treaties. Though they can be overruled by international treaty law (as frequently happens in court), the United States, Canada and Mexico all have some limited protections for wrecks found within their waters. But for any laws to be effective, they must be known to those whom they regulate. As Kevin J. Foster of the National Park Service stated in 1992, "Most sports divers are unaware that any law beyond 'finders keepers' applies to shipwreck sites" (Foster 1992:67). This situation may be said to have improved over the last twenty-four years, but it has not improved much.

## Technical Advances

Recovery of coins from wrecks is an activity quite as old as coins. During the first 2,000 years after coins were developed, the same skin-diving skills that enabled Greek divers to bring up sponges were used to salvage wrecks in water up to about 30 m deep, with some unusually tough divers able to go a little deeper for one or two minutes.

A Massachusetts ship's carpenter and sea captain, William Phips (1651–95), was a pioneer in the use of mechanical means


**Figure 11.4.** William Phips's crew salvages treasure off the coast of Santo Domingo, 1687. Published in *The Border Wars of New England* by Samuel Adams Drake, 1897.

to salvage treasure from sunken ships. He became wealthy, as did some of his backers, when he was able to raise a substantial treasure in 1687 from a Spanish ship that had gone down off Santo Domingo. (As Sir William, he later was briefly the Royal Governor of Massachusetts.) By using a sealed and weighted upended wooden container, open at the bottom, he enabled men to breathe air under the sea long enough to do the required salvage work.

Similar techniques were used increasingly over the years, with occasional improvements enabling deeper and deeper salvage. Today's salvage workers and underwater archaeologists, or at least those with sufficient capital behind them, are able to go deeper than ever. Deepwater technologies, used by the offshore oil and gas and subsea cable industries, are used to conduct deep-sea archaeological investigations throughout the world. Such tools include side-scan radar, manned submersibles, remotely operated vehicles, electronic survey and navigation systems, and a wide array of underwater digital cameras and remote controlled artifact collection devices (Cunningham Dobson, Gerth, and Winckler 2009:1). It is clear now that there are no theoretical limits on the depth at which work may be done in the oceans; no wrecks that are out of reach any longer.

But these advances, like many other technical advances, are a double-edged sword. While well-capitalized salvage projects may reach the very bottom of the sea, most academic institutions much more quickly reach the bottoms of their budgetary allocations. In short, those who do archaeology best are unable to keep up with those who do it for maximum profit. To some extent, the results are bound to include plundered wrecks in which all other artifacts are discarded or destroyed in the search for salable treasures.

Those who deplore such developments cannot effectively prohibit them. Archaeologists do not have the power to legislate or to conclude treaties. Protection of archaeologically valuable wrecks in international waters will require both changes in national laws and treaty agreements between governments, as well as actual changes in the laws of the sea. As all governments respond (in varying degrees) to public opinion, public education is an essential part of any campaign to save such wrecks from conventional salvage operations.

## Salvage, Law, and Archaeology

An official summary of certain problems with the legal status of our underwater cultural heritage is found in the abstract of the "Underwater Cultural Heritage Law Study" developed by the United States Department of the Interior in 2014 (Varmer 2014).

> The protection and management of Underwater Cultural Heritage (UCH) is a challenging topic, as it involves the interplay of United States (U.S.) statutes, maritime law, international law, and often complex issues regarding what law applies when and against whom it may be enforced. At the same time, there is ongoing risk from activities that may directly or indirectly destroy UCH, such as unscientific salvage or looting, energy development, dredging, and bottom trawling. No single statute comprehensively protects UCH from all of these human activities.

The 2014 study is an excellent summary in 101 pages of the current state of maritime law, both international and United States, as it relates to salvage, to treasure, and to our underwater cultural heritage. It may be found online at http://monitor.noaa.gov/pdfs/uch-law.pdf.

The key change in international and national laws that would protect wrecks would be a ban on underwater salvage, at least of wrecks earlier than a certain year. Quite to the contrary, most jurisdictions still have laws promoting salvage, in keeping with traditions that may be out of date. Once, the raising of a treasure from the sea could make a whole town more prosperous, and substantially improve the financial condition of certain key officials. During World War II, many Great Lakes wrecks from the previous eighty years were raised so that the metal could be used for the war effort. We can hope that such quantities of salvaged metals will not be so urgently needed in the future. Even a considerable fortune is no longer of substantial importance to any nation-state, and when set against the social and intellectual advantages to be gained from conservation of archaeological resources, a ban on salvage would be advantageous to society. But the laws that promote salvage remain in force, and they are quite consistently enforced by courts.

Some would reduce the struggles over conservation of our heritage to a black-and-white contrast between scholarship and collecting. Collecting, in this view, is the evil basis of all plunder of archaeological sites, on land or undersea. If the struggle between the two is indeed irreconcilable, then archaeology is

doomed, as there will always be far more collectors than archaeologists. Collecting is a basic human behavior (Akin 1996:108). The subject of cooperation between archaeologists and collectors is explored in Chapter 15, but this is an appropriate place to note some cooperation between salvagers and archaeologists, based on the popularity of coin collecting, that has enabled archaeologists to study a number of ships being salvaged.

When archaeologists work with salvage or treasure recovery firms to identify and analyze the artifacts found in shipwrecks, the circumstances are hardly ideal. The salvage and recovery companies are intent on making maximum profits, and the only way this can happen is for at least their share of the coins and other artifacts to be sold. When governments and their museums and universities get a share, that share is sometimes not sold but retained for study and display. In the United States, many archaeological workers are employed by private, profit-making firms. Even operating under laws promoting artifact conservation, cultural resource management (CRM) archaeologists are sometimes required to prepare artifacts for sale or private retention when the site owner does not wish to place them in a museum. At sea the costs of recovery are considerably higher, and more artifacts end up being sold. The pressure to provide money to the various stakeholders can be considerable, and this can set tight deadlines for completing work.

It should be noted that most professional treasure hunters make their living by convincing others to invest in their plans rather than by recovering treasure. Their adventures are conducted with other people's money, and a highly profitable find can sometimes be rather embarrassing, as the adventurer may have promised a combined total of more than 100 percent of the proceeds to investors.

The very existence of treasure hunters has affected the work and work planning of archaeologists and has limited the amount of exploration and its presence in official records. In his autobiographical book *Submerged: Adventures of America's Most Elite Underwater Archaeology Team* Daniel Lenihan reports that he and the National Park Service Submerged Cultural Resources Unit he led avoided doing regional surveys of wrecks because the survey information could be obtained by salvage operators (2002:265).

That work with salvors can lessen the work quality of even the most dedicated and scrupulous archaeologist is a point made in *Underwater Archaeology: The NAS Guide to Principles and Practice* (Bowens 2009). This very useful British volume also notes that "other archaeologists may find that as part of their work for government departments or heritage organizations that they have to work alongside treasure hunters and salvors. In such a situation honest and intelligent dialogue with all parties is advised" (Bowens 2009:8).

In 1992, Ricardo J. Elia reviewed the conflicts between archaeological ethics and the treasure recovery business in an article in *Historical Archaeology* (Elia 1992:105–17). Those archaeologists who worked with the salvagers were able to cite various reasons, some of them good ones, for their agreement to do the work. Basically, the information they developed would otherwise be lost to science, and once a wreck was salvaged, the information would be lost entirely.

The positions of most archaeological organizations were consistent and put up three barriers to the participation of archaeologists in wreck salvage operations. As Elia reviews, the three are, first, the "conservation ethic" that "treats archaeological sites as nonrenewable resources that should be preserved whenever possible and only excavated if they are threatened." The second is "explicit rejection of commerciality in archaeology, and, specifically, of the buying and selling of artifacts for financial gain." The third standard "is the requirement that all recovered artifacts and project documentation be permanently curated."

Based on these positions, most archaeological organizations in the United States have refused to permit papers on commercially connected wreck salvage archaeology to be published in their journals or discussed at their conferences since about 1989. One justification for this position is that without it, pressure will lessen for changes in the law to ban wreck salvage operations for profit. However, effective pressure since 1989 has not been noticed by legislators, and in fact during some economic hard times, all funding for underwater historic preservation and archaeological work has been eliminated by some states. It might be suggested that the failure of a policy to gain the results desired, after decades, constitutes a reason to review the policy.

Looking abroad, we find that it is quite common for museums and other collections to "deaccession" artifacts that are multiple duplicates. Not surprisingly, they sell them for money. In fact, this is also common, but less public, in the United States. Permanent curation of all artifacts is an ideal, rather than a reality. In fact, the sale of coins from wrecks is just a little earlier than usual in the process, as most of them constitute multiple duplicates that would be unlikely to be retained for long periods in most museums or university collections. Perhaps they should be—and if those who believe they should be retained forever can convince their fellow citizens to make available the funds for archaeological storage and analysis, this could become a reality. But it is not a reality yet.

Elia also noted that both CRM archaeologists and archaeologists working with treasure recovery firms may gloss over problems, decline to mention errors, and even praise their patrons. Some archaeologists, and others, working for governmental organizations have demonstrated similar behavior on occasion as well. And the patrons of both underwater and CRM archaeologists boast of the archaeological work they finance, even when they are legally forced to finance it, and associate themselves with the archaeological work for publicity and goodwill purposes. Shocking though this behavior may be, it is hardly unprecedented. Some of the early archaeological works of the 1600s and 1700s were dedicated to wealthy noblemen (usually collectors) who financed their publication, generally with fulsome dedicatory praise that, upon careful historical examination, proves inaccurate in many details. Though somewhat less fulsomely, modern writers of archaeological reports often thank the corporations that were forced to pay for some of the work when a site turned out to be in the way of a development project or port expansion. Our posterity will know how much weight to give such praise.

Coins bring their maximum prices when they are correctly identified, the circumstances of their recovery are known, the project has been studied in depth by archaeologists, and the work has been published. If each coin is identified not only as to its mint and date of production, but according to its precise location in the wreck, collectors will pay more money for it. This provides real incentives for a treasure recovery firm to employ archaeologists to study the entire wreck, not just the coins, and use up-to-date techniques, theoretical reasoning, and

background knowledge to prepare a thorough, well-referenced, and well-illustrated report. Most collectors who buy a coin will also buy the report.

There are countries in which all old shipwrecks belong to the government, and state archaeologists are responsible for recovery and conservation of wrecks. This is not currently the law in the United States. Until it is, private individuals and firms will be permitted to raise some wrecks and their cargoes. Is it desirable that the work be done by qualified archaeologists rather than by uncaring salvagers out only for cash? We leave the answer to our readers.

## What do we Learn from Coins Recovered from Shipwrecks?

### *Dating*

Coins can help date shipwrecks, and can help, in some circumstances, in establishing the construction date of the vessel. A few small coins are sometimes found inside inaccessible places in watercraft, having been there since the original construction. Further, in many places over at least two millennia, coins have been placed under masts where they stay as long as the mast is in place (Carlson 2007; Smith 2011). In each case, the most recent coin gives a date after which the activity must have occurred. Other dates can be learned from coins that have moved in known patterns. For example, a Vietnamese zinc dong from before 1840, found in the wreck of a Chinese fishing boat in California, would not indicate that the wreck must be from after 1840, but rather that it must be from after 1880 when Vietnamese zinc coins first came east across the Pacific from Guangdong Province. However dates are determined, the goal in each case is to locate the wreck not only on the seafloor, but in the archives. Most North American wrecks are noted somewhere in existing records. Study of the archival material about a shipwreck can present interesting correlations and contradictions with the artifacts found in the wreck.

### *Variance from Official Records*

Somehow, when a ship that officially recorded having a specific sum on board is recovered, it often turns out that much more money is actually in the wreck. Unofficial cargoes, including coins, were often not mentioned to government officials to avoid taxation or other forms of seizure. Stolen money, smuggled money, and the money of people who like their privacy all may swell the amount of money actually aboard a ship well above the amount declared to government officials. Other cargo is also often undeclared. Some smuggling has always occurred, but at some times in some places smuggling has been a most popular pastime engaged in by most of those on board.

### *Distinguishing Uses of Parts of the Ship*

The locations of coins, if they are recorded correctly in a wreck that maintains some vestige of its original form, can help tell a cargo space from passenger quarters, officers' quarters from seamen's quarters, and give clues to the economic classes of the passengers, usually somewhat consistent with the divisions of passenger quarters from first-class on down to steerage.

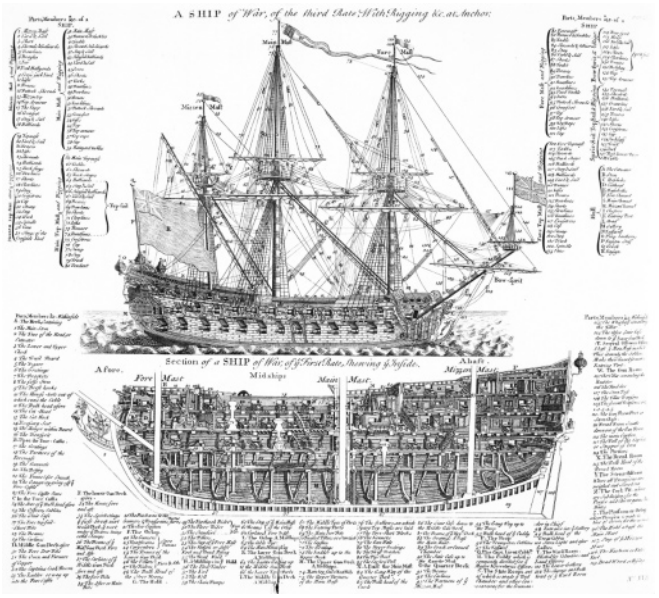


**Figure 11.5.** Diagram of a warship. From Ephraim Chambers's *Cyclopaedia*, 1728.

The people of higher-economic status had more gold and silver. The people of lower-economic status had more small coppers and fewer coins in general. There were only a few places where a locked safe or chest of high-value coins might have been safeguarded by the purser or the captain. Study of the coin assemblages and their composition, in addition to study of each coin individually, can yield information very helpful in analysis.

### *Ethnicity, National Origin, and Religion*

Tokens and medals may supplement coins and be of some help in determining who was in the crew and among the passengers. Not only the last port of call, but a passenger or crew member's national origin may influence which coins were in a purse or a pocket. Coins may reflect a place where someone recently engaged in commerce and may sometimes reflect an intended destination. Religious medals (and good-luck charms) have often been common among sailors and other travelers; the religion and the language of the medals give good clues about the wearers or holders. If a space tentatively identified as holding British passengers yields various copper and base-silver Hindu medals, it may have held the East Indian crew instead. Holed coins may be particularly useful, as they were often carried as charms, and there are ethnic and religious differences they may indicate. The precise location in the wreck of each artifact is required for the best analysis. Detailed information will be lost forever if crude methods of extracting artifacts are used, such as directed prop wash or big suction hoses.

A ship may have an amazing number of national and ethnic connections. The owners may come from a different country than the builders, and the officers and the crew may be from still other countries. The charterer and the passengers may be from different continents, and the cargoes may all be from countries that differ from all of the foregoing. One ship may encompass representatives of more countries than a big port city's consular district. This is not a new phenomenon but a very old one.

### *Shipping Routes and Trade Routes*

A cargo containing coins can be very helpful in determining the origin and destination of that cargo and thus provide hints as to the identity of the ship and the nature of its voyage. The coins carried by passengers and crew may also give such indications. Even the ballast, if it was dredged from a harbor, may contain coins that were lost in that harbor in times past.

### *Ownership*

Coins can be helpful in determining past ownership of specific cargoes and groups of artifacts. Analysis of specific groups of coins may determine the intended uses and destinations of the cargo. Coins that are the property of a government, whether from a mint or from tax collections, may differ from coins that are the property of a bank, coins intended for a company payroll, coins that are intended for a military payroll, or coins that were the personal property of passengers. When it is possible to compare the coins to inventories and manifests, full attribution may be possible even after centuries. Determination of ownership can be useful in archaeological analysis and has also been used in court cases.

### *Minting Information*

When a large shipment of coins from a mint is found, as has happened a number of times with ships from the Spanish "plate fleet," numismatists can greatly expand their knowledge of mint operation and coin production. Careful examination of the coins may show how many coins were struck from a single die, the allowable variations from the desired weight of each coin, and varieties and dates previously unknown. When small coins were struck with larger dies, examining a large number of coins struck from the same die can be required to reconstruct the whole die, and firmly identify coins as being struck by one die or another. This often allows coins without dates to be dated precisely, as some cob coins were produced without much care from dies whose dates were along the rim, where they did not fall on most of the coins. Finding a date on just one such coin can date all the coins from the same die or even from several similar dies. Reverse and obverse dies usually last for differing lengths of time, so a study of die links can allow numismatists to arrange each die in chronological order and date each coin even more precisely. As Spanish colonial coins bore the initials of mint officials, examination of a large cargo of coins can fill in the dates of mintmasters' and assayers' terms of office.

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# Materials, Corrosion, and Cleaning

## The Coin Metals in Historical Order

Various alloys of three principal metals were used to make the first coins: copper, gold, and silver. In China, the earliest coins were made of copper and its alloys. In the northeastern Mediterranean, the ancient Greek world, the first coins were of electrum, a naturally occurring alloy of gold and silver. By 2,600 years ago coins were made of gold and then of silver, though perfect separation of the metals was quite difficult with the available techniques. Greek copper coins were added around a century later.

**Figure 12.1.** Electrum 1/3 stater of Lydia, about 600–570 BCE; Gold stater of Croesus of Lydia, 561–546 BCE; Silver drachma of Naxos, Sicily, 530–510 BCE. Photo Credit Classical Numismatic Group, Inc.

The earliest coins were not made of any pure element but had alloying metals in addition to the basic coinage metals. There were three reasons for this. First, available technology could not separate all alloying metals from the ores. Second, alloys were added to each of the three coinage metals to harden them, making coins less susceptible to wear in circulation. And third, although coins had not been around long, commerce had, and merchants and metalworkers were adept at saving wealth by adding cheaper alloying material to precious metals.

The metals used as alloying material included tin, zinc, lead, antimony, nickel, and even arsenic. The health of metalworkers was not a strong concern of the wealthy and powerful. In the following centuries, many coins would be made from tin, lead, and zinc, as well as iron and its steel alloys. The majority of the coins made from these metals of lesser value (often including copper) would be "token coins," which the public was impelled by various means to take in trade as though they were made of gold, silver, or copper. After the issuing authority disappeared, most token coins continued in use, but as base-metal coins of a particular weight, rather than for their original imposed value. Some issuing authorities disappeared as a direct result of issuing debased coinage, particularly those who unwisely insisted on paying soldiers in a base metal instead of gold or silver.

When relatively small quantities of copper or other base metals are alloyed with gold or silver, the color of the main metal is little changed. But when red copper is alloyed with zinc or tin, there is a notable color change to go with the change in hardness and other features of the alloy. Copper alloyed with tin is bronze, while copper alloyed with zinc is brass. There are literally thousands of different copper alloys. Most were developed over the past two centuries, and each has had a certain percentage of these and other alloying metals. When the alloy contains both tin and zinc, as is common, it seems to be up to the manufacturer whether to call it brass or bronze. The copper-based coins of most interest to archaeologists in the Old World are of three main compositions: bronze, brass, and fairly pure copper. In the new world these remained the basic alloys for older coins, but the addition of nickel to the mix in the 1830s created copper-nickel. It was used for some tokens with a silvery appearance, and later it was used in some US coins starting in 1857 and some Mexican coins starting in 1882. Substantially pure nickel was used for Mexican five-centavos coins from 1905 and Canadian five-cent coins starting in 1922.

Plated coins have always presented challenges to those using them and to archaeologists. While plating methods were cruder then than now, the earliest plated coins are at least 2,500 years old. Some were produced by governments, and some by private counterfeiters. The purpose of plating has usually been to make a coin look like something it is not, by giving it an outer surface differing from the metal of the interior. Certain platings, for example of gold or nickel or chrome, or even copper, can also reduce corrosion, and a zinc plating (as on the 1943 US steel cent) has been used as galvanizing


**Figure 12.2.** North American coins and tokens of specific compositions. Mexico silver 5 pesos of 1952, with marked weight of 27⅞ grams, fineness of 72 percent; Arizona Mining Association medal from 1962 made entirely of "Arizona Copper;" 25th anniversary medal from 1893 of the Albany, New York, Eintracht Gesang Verein (singing society) made of a pewter alloy of tin, antimony, and lead; 5 centavos of 1905, the first Mexican nickel coin; Province of Ontario medal for the Canadian Confederation Centennial in 1967, composed of platinum, gold, silver, nickel, copper, zinc, and iron, all mined in Ontario.


**Figure 12.3.** Metal plating. Gold-plated medal for the George Washington bicentennial in 1932, with plating worn off on the high points of the bust, revealing the copper beneath. Nickel plating on the pinball token of St. Paul, Minnesota's Poodle Dog Bar tended to wear off from the high points of the dog, showing the darker copper. Two distinctly different metals form the 2002 two-dollar coin of Canada.

to protect the inner metal from electrolytic corrosion. Over the last three decades, additional reasons have appeared, and plating can be part of complex production methods that yield a coin meeting a specific electronic signature requirement for vending machines. Many plated tokens and medals have been used in North America, and many current Canadian coins are plated, as are US cents since 1983. A variation on plating is the "sandwich" composition of a bronze interior and copper-nickel obverse and reverse used for US dimes, quarters, and half-dollars during the last half-century. In this case, the bronze shows clearly around the rim, so there is no effective deception. And not deceptive at all is the bimetallic token or medal of which several Mexican denominations and the Canadian two-dollar coin are examples, with rims and centers of very different metals. Fortunately for the North American numismatic archaeologist, the composition of each Mexican, Canadian, and US coin is readily available in standard coin catalogs. With both coins and tokens, care must be taken not to remove plating or such other outer layers a piece may have.

When Europeans came to the Americas, they brought some coins and tokens from home with them, and a few coins were struck in Europe for use in the Americas. But the basic job of the new mints set up in the Spanish colonies was to make silver and gold into coins to be sent to Spain. To do this efficiently, the coins had to be fairly pure. When the coins got to Spain they were often melted down and mixed with alloy to be struck as new coins with a lower percentage of purity. There were some instances of debasement at certain mints, but these were intended to benefit some mint officials and workers at the expense of the Crown, and many mint workers were executed for making debased coins.

One new metal was added to the coinage mix in America, but examples are quite rare, and very unlikely to be found in North America. Platinum, found in alluvial gold and silver deposits that had been worked by pre-contact indigenous people in Colombia, was used in some Spanish colonial coins of the late 1700s and early 1800s as an adulterant. Platinum


**Figure 12.4.** Coins made of platinum metals: Russia 1828 platinum, 3 rubles; US 2014 platinum, 100 dollars; Canada 2006 palladium, 50 dollars.

also was used to make some counterfeit gold coins, plated with gold. It was much cheaper than gold at that time and place. From 1828 to 1845, a few official platinum coins were issued in Russia, but it is unlikely that any will be found outside of collections in North America. All these early platinum coins contained at least two of the platinum metals, as separation was difficult. More recent platinum coins are not struck for circulation, but for investment, and are unlikely to enter the archaeological record.

The big advances in metal refining and production during the 1800s led to the development of many new alloys and one major new coin metal. While the aluminum atom is one of the most common in the earth's crust, metallic aluminum was quite rare and expensive until the 1880s. Aluminum plates were used in the imperial court of Napoleon III to serve the most prestigious guests, and aluminum was used to top the Washington Monument as a demonstration that no expense was spared to honor the Father of Our Country. But when new refining techniques were developed, aluminum suddenly became inexpensive, and by about 1889 tokens were struck in the metal. Aluminum medals have also been common worldwide. During the 1890s aluminum became the most common metal for tokens in the United States, and it continued in first place through the twentieth century. During World War I, German coins were struck from aluminum, and it has been used for coins ever since, particularly in times of inflation. But aluminum coins, though considered by officials, have never actually been placed in circulation in Canada, the United States, or Mexico.

The sharp drop in the price of aluminum is a reminder that separation of metals into precious metals and nonprecious metals is subjective and socially determined. Some Native American groups valued copper above gold. Early Spanish miners in Colombia discarded platinum as waste, and it


**Figure 12.5.** Aluminum dairy token from the 1930s from Condon, Oregon, is still in excellent condition. Another token from the same period from the Purity Dairy in Indiana has spent some time in the soil, and is discolored and slightly corroded.

acquired its name from "platina," a diminutive of the Spanish word for silver, because it resembled silver but was less valuable. Prices vary, sometimes by wide margins, and there may be other factors than price that determine what metals are used in coins. During World War II, nickel was declared a strategic metal in the United States, reserved for military and key industrial use. As a result, silver was used in the five-cent coin instead. So a "precious metal" was used in the next-lowest coin denomination, one that had contained no precious metal for seventy-five years. When social factors other than price were taken into account, silver had become a less precious metal than nickel. When we understand that metals cannot clearly and permanently be separated into the precious and the nonprecious, we look for other ways to categorize them. Chemists and physicists have developed, on the basis of the physical structure and properties of atoms, the periodic table of elements that can help reveal more permanent relationships among the metals.

## The Periodic Table of Elements and the Metals Used for Coins and Tokens

While there are many ways to display the useful information encoded in the periodic table, the illustration provided here is most commonly used. Vertical columns are "groups," and horizontal rows are "periods." The relationships between the elements, often suggested to chemists and physicists by their placement on the periodic table, are far too complex to go into here, but some relationships and groupings become apparent when the metals used for coins are reviewed.[1]

The lanthanides (elements 57 through 71, the "rare earths") and the actinides (elements 89 through 103) are shown here only in summary in Group 3, periods 6 and 7. Though some of the lanthanides now have important industrial uses, they have not yet been used in coins or tokens, and are not relevant to this subject. The actinides are not used in coins because even those with long half-lives, such as uranium and plutonium, are too radioactive to carry in a purse or pocket.

Even before the development of the Periodic Table of Elements by Dmitri Mendeleev and his colleagues during the

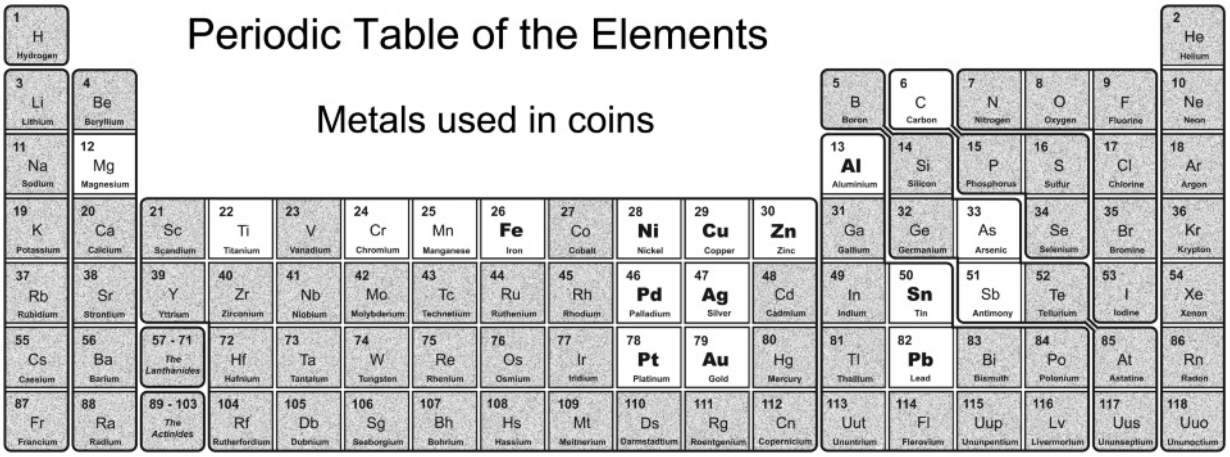



**Figure 12.6.**

second half of the 1800s, three metals were grouped by chemists as the "coinage metals": copper, silver, and gold. When the periodic table was worked out, they turned out to be Group 11 on the table, sharing many characteristics because of their atomic structure. This group is still called the "coinage metals" today by scientists, though most coins are now made of other metals, sometimes in combination with copper. The group contains one additional element, Roentgenium, a radioactive metal that decays within seconds after being created. It presumably resembles the other coinage metals in various ways but is, of course, impossible to use for coinage purposes. The other elements in Period 7 are omitted from this discussion for similar reasons, basically because any attempt to use them for coins would be fatal.

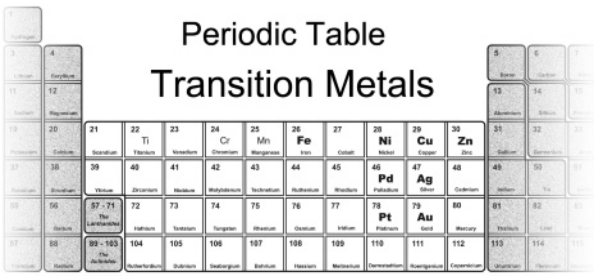



**Figure 12.7.**

Group 11 is part of a very large class called the "transition metals" (groups 3 through 12). Period 4 of the transition metals on the periodic table includes not only copper (Cu) but iron (Fe), nickel (Ni), and zinc (Zn), all metals from which coins have been struck. Titanium (Ti) has been used for a few commemorative or special coins, but has often been used in an aluminum alloy that is much harder than unalloyed aluminum.

Period 3 includes just two metals used in coins, aluminum (Al) and magnesium (Mg), that have been used in aluminum alloys. Magnesium is rarely used alone because it is very flammable and cannot be extinguished with water.

Magnesium is one of the alkali earth metals. The only metals more reactive are those in the alkali metals, including lithium and sodium, which tend to explode when exposed to water and are thus out of the question for coins. Other alkali earth metals tend to be brittle, at least in the forms in which they have been generally available, and this has excluded them from coin use along with their reactivity.

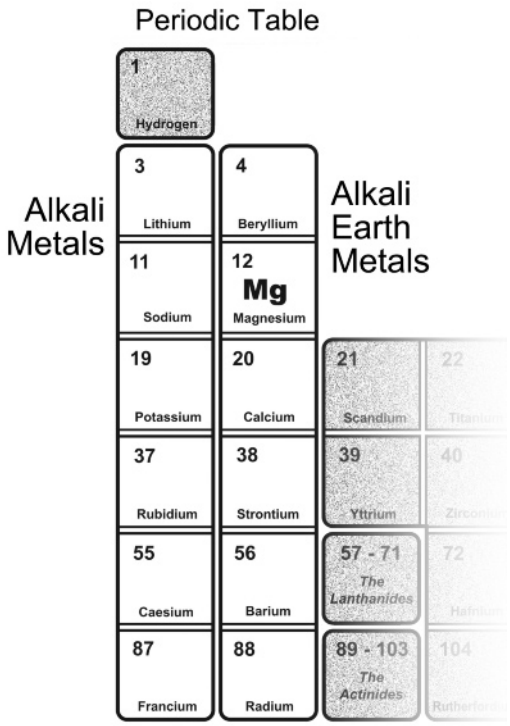



**Figure 12.8.**

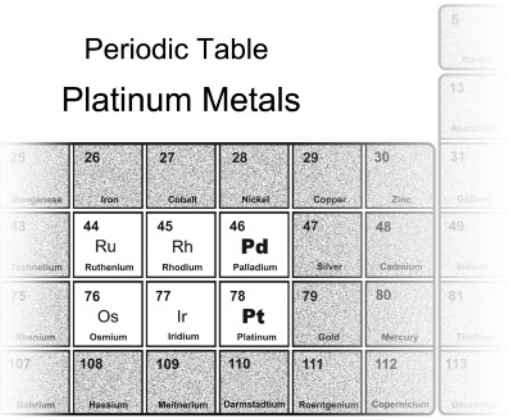



**Figure 12.9.**

The only other subset of the transition metals used for coinage has six elements, the platinum metals. They are ruthenium (Ru), osmium (Os), rhodium (Rh), iridium (Ir), palladium (Pd), and platinum (Pt). Earlier platinum coins, like older platinum jewelry, normally included not only platinum but palladium and at least traces of some of the other platinum metals. Commercially effective means of separating the various platinum metals from one another did not come into use until the end of the 1800s, and one of the metals, ruthenium, was not even identified in the laboratory until 1844.

There are distinct industrial uses today for each metal, but the very high cost and price volatility of all six metals reduces their use in both industry and jewelry. Coins have been struck by several countries in platinum and to a lesser extent in palladium, either as collectibles or as bullion coins. The first palladium coins, intended as novelties for collectors, were issued by the Kingdom of Tonga in 1967. Several other countries later issued palladium coins for the bullion trade. The first official platinum coins, the Russian examples from 1828 to 1845, fell out of use after a price drop in the 1840s, and the new wave of platinum coins did not get underway until the 1990s when several countries minted them for collectors and for the bullion trade. Finding platinum coins in a North American archaeological site would be highly unlikely. However, if found, they should be in excellent condition because platinum does not easily corrode, and its high melting point would even allow such coins to survive most house fires.

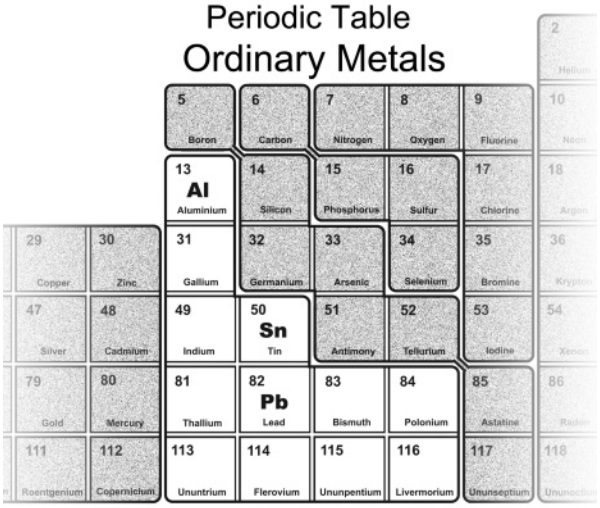



**Figure 12.10.**

Aluminum (Al) is the lightest of the "ordinary metals." Other ordinary metals used for coins and tokens are tin (Sn) and lead (Pb). Both have most often been used as parts of alloys. Tin is the second metal in bronze, and lead is a component, along with tin, of older pewter. Lead's toxic properties keep it from being used for tokens as was once common, but the chief limitation was its softness; a lead coin or token does not last long in circulation due to excessive wear.

The "metalloids" include arsenic (As) and antimony (Sb), both having been used as alloys of tin, copper, lead, and other coinage metals. Few if any tokens or medals with substantial arsenic content will be found in North America, and antimony is probably almost as rare among numismatic material found on this continent. It is limited to pewter tokens used in the early British colonies and some later medals.

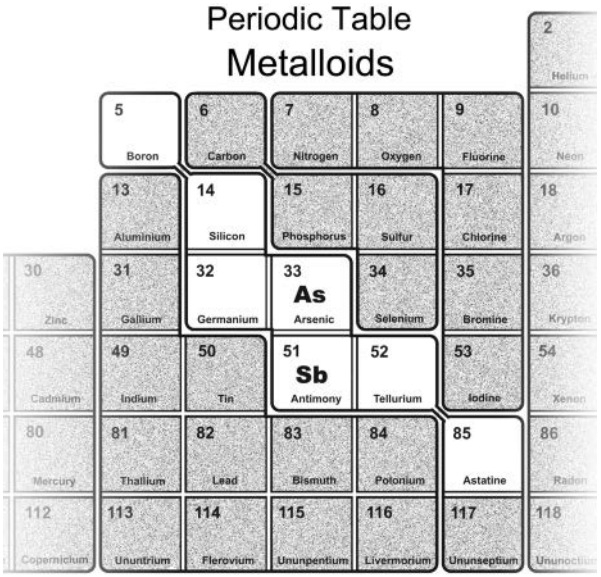



**Figure 12.11.**

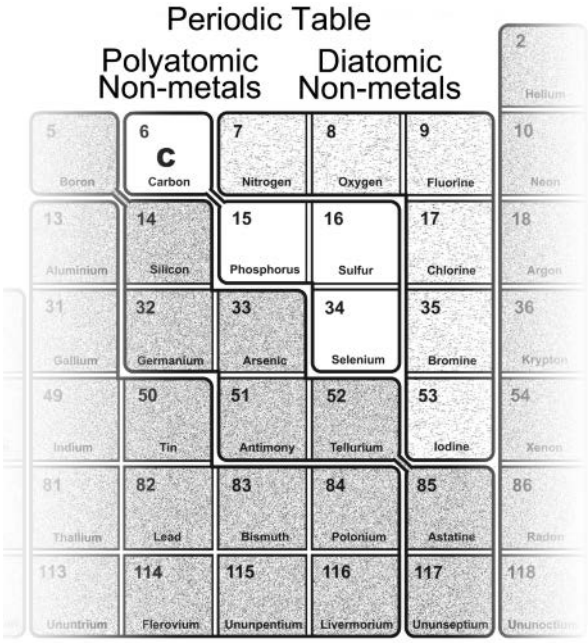



**Figure 12.12.**

Steel is basically an alloy of iron and carbon and often has additional alloying metals. Carbon (C) is a nonmetal, but it is in Period 2 with lithium, beryllium, and boron. It shares Group 14 with tin and lead, so it shares some characteristics with certain metals. Steel is one of the earliest intentionally made alloys. Starting in late ancient times, iron melted together with carbon from fuel sources produced much harder steel on the surface of iron lumps that were worked into blades, which gave them greater hardness, sharpness, and durability. Classic examples are the blades of Damascus and the swords of Japan. The process may still be observed in use in the very labor-intensive production of ceremonial Japanese swords. During the 1800s steel production became much more efficient, and during the early twentieth century experimentation with alloys and production techniques continued. Almost every metal has been tried as a

component of steel alloys, and some metals that formerly had little use have become important elements in steel alloys now vital to industry.

Several older alloys of iron have been used for coins. Some local and emergency iron coins were issued between 25 CE and 960 CE in China. Massive issues of iron coins began in 970 CE, early in the Song dynasty. A few iron coins will be found with the brass coins imported from China beginning in 1850, but iron coins were rejected for most of the noncurrency uses that brought the Chinese coins to America, so they will be found only rarely. The United States used steel with a zinc coating for the 1943 cent. But those cents were so unattractive after they rusted that they did not encourage mint officials to consider the use of steel again.

**Figure 12.13.** The 50 centavos of 1983 was the first of Mexico's stainless steel coins. Mexican coins of this alloy continue to be minted today.

The striking of coins from harder stainless steels began in 1939 in Italy. Stronger and harder dies required advances in production and heat treating of the steel from which the dies were made, but by the 1950s stainless steel had become a standard coinage metal. In recent years, many Mexican coins have been struck from stainless steel. A big component of stainless steels is chromium (Cr), often in the 15 to 20 percent range. Chromium is in Period 4, and it shares Group 6 with molybdenum and tungsten. Nickel (Ni) is also a component of many stainless steels, as is molybdenum. Nickel is located in Period 4, and shares Group 10 with palladium and platinum. Molybdenum (Mo) is in Period 5, and shares Group 6 with chromium and tungsten. No "stainless steel" alloy is really stainless, and exposure to highly alkaline or acid water or soil will cause rust, but they certainly corrode much more slowly than iron and nonstainless steels. Studies are now underway to assess the possibility of using stainless steel for certain United States coins, but no one appears to be in a hurry to make such a change. As struck stainless steel coins or tokens require great pressure and high-quality dies, such tokens have only become common recently, and they are unlikely to be turned up by North American archaeologists except in surface and near-surface collections of recent material.

A few metals, such as zirconium, may be found in sales samples given to prospective industrial customers, but have never been used in tokens or medals for reasons of toxicity, brittleness, softness, excessive die-breaking hardness, or simple disinterest. There are also some metals not actually used for coins that may be obtained in "coins" produced by companies that sell them to element collectors, people who try to obtain at least one sample of each element that will not kill them (Gray 2009). The prices are very high compared to the industrial prices of the metals, as it takes great care to make little medals of metals that are brittle, extremely hard, or otherwise difficult to work. As none of these sample medals will turn up in archaeological sites during the coming few decades, these metals are not discussed here.


**Figure 12.14.** Sales sample of "zirconium, a nuclear-age metal" from Wah Chang Albany, a Teledyne Company, that used this name from 1967 to 1996. The company operated the government's zirconium plant in Albany, Oregon, to provide the metal for use in nuclear ships and submarines of the US Navy.

## Coin Corrosion and Patinas

Much has been written about corrosion of the copper, bronze and brass alloys from which coins have been made for over two millennia. Most of it is of little help to North American archaeologists because the patinas and corrosion effects found on ancient coins today are the result of their presence in various soils for a very, very long time. The oldest numismatic material recovered in North America (with the exception of a handful of Viking era coins from several North Atlantic sites) was deposited about five hundred years ago, one-fifth as long ago as some ancient Greek and Chinese coins found in Europe and Asia. Most coins found in North America were deposited even later and have had less time to acquire deep patinas and become corroded. Few require much treatment to be identified, though they may not be pretty.

People have always tended to live near water sources, so many recovered coins and tokens have been exposed to water or wet soil. In considering the environmental effects on the coins, the main consideration is whether the water or soil is (and has been) acidic, alkaline, or close to neutral. Water and wet soil that is neither heavily acidic nor alkaline generally does relatively little damage to coins. Gold coins in particular may look as fresh as the day they were minted when the soil is washed off of them. And there may be little damage to silver and copper as well. Even the most vulnerable coins, those made of zinc, may be hardly damaged when the pH is neutral.

But many sites do not have a neutral pH. Lakes, ponds, and puddles tend to be either acidic or alkaline. Generally speaking, most highly alkaline lakes are located to the west of the Continental Divide. This includes the many dry lakes of the West, which are often the sites of former chemical mining camps or settlements. Many swamps are acidic as are bottom soils along many rivers in the East. But smaller bits of soil may be strongly acidic or alkaline often due to human action. Whole valleys in some mining regions have been strongly affected by sulfuric acid released by smelting before pollution controls were imposed. Lakes and ponds in areas downwind from heavy use of coal may have turned acid over the last century due to the "acid rain" phenomenon. Small areas where wood ash has been dumped, or pits filled with the debris of house fires, may be strongly alkaline. And specific layers of soil, or mud under water, may become acidic or alkaline due to the action of bacteria and other forms of life. Under such circumstances, even gold coins may become encrusted with corrosion, as the chemicals react with the alloying copper that makes up roughly 10 percent of the metal. In a strong solution for a long time, even a gold coin may become somewhat porous as its copper goes missing.

Zinc is a strongly reactive metal, and it tends to protect other coins in a group, acting as a sacrificial anode. A zinc coin may go missing entirely, leaving only a cast of its shape in the mud, or it may be found as a porous white vestige of itself, often falling to bits when it dries. Adjoining copper or silver coins may be in near-perfect shape, having been protected from corrosion by the zinc. Brass coins, made from an alloy of copper and zinc, may be found in very porous condition because the zinc was leached out.

**Figure 12.15.** Aluminum token from Keeler, California, recovered from highly alkaline soil next to Owens Lake.

Aluminum tokens do not do well in strongly alkaline soil, such as the beds of dry lakes. A token from Keeler, California, found after about ninety years in the soil of this town on highly alkaline Owens Lake, retains just enough metal for identification.

Beach soil, sea swamps, and other salty wet places may strongly affect coins. A single coin will usually just lose mass. A group of coins of varied composition may degrade, or accept surface deposits, in complex ways. Temperature is an important factor, and identical coins deposited at the same time into a Florida beach and a Maine beach may look very different after a century. Most chemical and electro-chemical reactions progress more quickly at higher temperatures, and temperature also affects biological factors that determine which bacteria and larger plants and animals may affect the environment of the coin.

An exception to the temperature rule of thumb applies to "tin pest," a degradation of solid tin in which the pure metal transforms into a gray powder at temperatures below 16.2 Celsius (58 Fahrenheit). The colder the temperature, the faster the transformation proceeds. The powdered "alpha form" tin acts as a catalyst for the transformation and causes adjoining bits of solid "beta form" tin to become powder as well. Tin pest can be prevented, or at least shifted to lower temperatures, by alloying the tin with certain other elements, including lead, antimony, or bismuth. Tokens largely made of tin were heavily used in Britain before 1600 and in the 1648–72 period, and many of them came to North America. One reason for the low population of tin tokens observed today is that if they were exposed to the elements during the winter, they probably became a gray powder that would not have been identified by archaeologists as having a numismatic connection.

**Figure 12.16.** Tin pest was photographed in 1913 eating away at a Dutch, 1692, medal by Johannes Smeltzing honoring Reformed Church minister Balthasar Bekker, whose rationalist campaign against witch hunting cost him his pulpit. The photograph accompanied an article in Popular Science assessing the speed and destructiveness of tin pest. A medal in original condition is shown for comparison. Left image from the Amsterdam Museum.

## Cleaning: Yes or No and How Much?

Cleaning coins is not simple for an archaeologist. When coins are in the hands of coin collectors or the dealers who sell to them, the only factor considered is generally market value. Will cleaning raise or lower the market value of a coin? The answer depends on many factors. For an archaeologist, particularly when the coins will not be sold off after analysis, other questions are much more important.

Certain changes in coins during their period of deposition may give useful information to an archaeologist. The color and form of corrosion and patinas may carry information about the environment in which the coins were deposited, and even more importantly about other things that may have been deposited with the coins. Old World archaeologists may be able to get a good idea at a glance of the amount of time certain coins have been in the ground if they are familiar with the composition of the coin and the soil in which the coin is found. This is much less likely in North America due to the relatively small time depth and the relatively low number of coins found. But in the case of soils that have not been chemically tested, an experienced numismatic archaeologist may gain a good idea of the chemical composition of the soil from the appearance of a coin. These ideas should always be checked by an actual analysis of the soil, beginning with an assessment of pH. Particularly in industrial areas, some chemical features of the soil may have changed over the years, and the coins may provide helpful clues to the changes.

Some coins exist in a range of alloys, in particular Asian coins produced over a span of some years. This may also be true of some colonial period and early United States copper-alloy coins and tokens that may have been struck from whatever roughly appropriate metals were available. When similar coins in the same soil, deposited around the same time, show different colors and textures of patina, this usually indicates different alloys. Tin may be used in some, tin and antimony in others, tin and lead in still others, and zinc in others, and all are alloyed with copper. Tests to determine the metallic composition of coins or tokens tend to be expensive, particularly nondestructive tests. Carefully assessing and recording the color and texture of the coin surface upon recovery may provide an inexpensive shortcut to the classification of alloys. Whenever such a coin is cleaned, important information may be lost.

The patination patterns of a coin may reveal uses to which the coin was put. If coins can be seen to have overlapped in particular patterns, to have been strung on cord or wire, to have been stacked evenly in wrapped groups, or to have been jumbled in with other objects, very different circumstances may have been involved in their use or deposition. Again, cleaning removes the patterns and causes the loss of information.

In addition to chemical changes to coins or their surfaces, there may be adhesions, coatings, and other things on coins that impel the tidy or the market minded to clean them. Some tokens have been painted as a way of distinguishing them, to

validate them for a new use or a new owner of a firm, or to mark a change in value. When the token is cleaned, the paint is gone, and it is no longer possible to make the distinction. A fire in a house or business may melt rubber or plastic or sometimes glass onto the surface of a coin. While a coin's market value would often be enhanced by removing the adhesion, the archaeologist loses information that could be essential to an understanding of the history of the site.


**Figure 12.17.** Lunch token from Bancroft Junior High School in Los Angeles, first issued in plain aluminum and later reissued coated with yellow enamel paint. If an excavated example has its paint removed, analysis will be based on the wrong date.

Any numismatic archaeologist with some experience has received coins from a site that have been carefully cleaned before they are handed over. When the specialist expresses displeasure, hurt feelings abound. All historic period sites are likely to produce coins. The best thing to do, before the excavation even begins, is to communicate to the ***field*** crew supervisor the essential importance of leaving all coins uncleaned until the numismatic specialist has a chance to examine them in the condition in which they come from the ground. If there is a contract, this should be specified in the contract. If there is no contract, this condition should be politely but firmly expressed in a letter, on this one subject, given to anyone who holds any authority over the excavators. Even rubbing a coin with a thumb can destroy important information. There is no need for the excavator to know what coin has been unearthed at the time it comes to light. Time enough to identify the coin or token after the numismatic specialist, or anyone in the lab or on the team who has had some numismatic training or experience, has had a good look at it, and recorded and photographed it, and even taken samples of associated materials. The grand title "numismatic specialist" may well apply to a part-time student worker with little experience rather than a distinguished expert, but this person should nevertheless insist on proper treatment for coins, which can convey so much information if properly handled and analyzed.

Generally speaking, the guideline for an archaeologist in North America is that coins should be cleaned no more than is required for identification. This leaves a lot of ugly coins in the back rooms of museums and universities. And what is the problem with that? The relatively few coins that may be used for display will normally be cleaned more intensively, but there is simply no need for all the coins excavated from a site to have their market value enhanced when they will not be put on the market. Keeping them in their original condition available for later reexamination can be very helpful, as techniques and knowledge improve.

Even when coins are to be sold after analysis, as is now normal with for-profit shipwreck archaeology, cleaning must be done with great care. Most artifacts from shipwrecks are sold to finance the project, and then to make profits for those who invest in the project. Archaeologists are rarely in charge of such projects, which are run by the controlling investors. National or regional governments sometimes exact a share, which is sometimes in the form of artifacts for a government-run museum. Hoards that are found on private property are also the private possessions of the property owners (or sometimes jointly owned by the discoverers and the property owners) in the United States. Specialists who deal with such coins and ready them for the market never say that they "clean" coins, as most collectors prefer not to own coins that have been cleaned. They "conserve" them instead, and their methods are "conservation methods," even if they happen to resemble very strongly what others do when they clean coins.

The cleaning or conservation methods easily found on the Internet are often very, very bad ideas. In particular, anything that involves abrasion, as with steel wool, jewelry polishing cloths, wire brushes, or even electric grinders (!) should be avoided. Concentrated acids or alkali solutions, often recommended for mass cleaning of groups of coins, are similarly destructive. Even when the coins are to be sold, these methods not only reduce the information obtainable from the coins, but sharply reduce their market value. For this reason, details are not given here for these destructive cleaning methods. Please just don't use them.


**Figure 12.18.** Twenty-dollar gold coin, 1883, San Francisco mint, from the Saddle Ridge hoard, before and after conservation. Photo by Kagin's, Inc.

An internationally recognized expert in coin conservation is David J. McCarthy of Kagin's Inc. of Tiburon, California. Among many other hoards, he has processed the big Saddle Ridge hoard of United States gold coins that is still being dispersed as this is written. His methods are proprietary, and he cannot discuss them or allow them to be published, but he says "I don't use anything on coins that I wouldn't put in my own body" (pers. comm. June, 2014). In preparing a few coins for display, or working on coins that will be sold after analysis, the archaeologist would do well to follow his example. We mention some other materials below, including dishwashing detergent and rubbing alcohol, but we note that drinkable ethyl alcohol will work quite as well as poisonous methyl rubbing alcohol.

## *Examination before "Conservation"*

When a coin is simply unidentifiable, or is intended for display, some cleaning or "conservation" may be needed. First, be sure to examine and take samples of adhering material, and of the material surrounding or adjoining the coin. It may demonstrate that the coin was attached to clothing, hidden in a flour jar, or deposited with a now-gone zinc coin that acted as

a sacrificial anode to prevent corrosion of the coin being processed. There are innumerable other possibilities, and samples may be useful in considering them.

Next, thoroughly examine the coin as it was found. Are there any patterns to its patina? Is it corroded on one side but not on the other? Do crescent-shaped patterns indicate overlap with other coins? Make careful notes, and take photographs as necessary. Now that expensive film is not required, and many photos may easily and cheaply be stored in electronic form, it should be standard practice to photograph each and every coin or token, on both sides, as it appears before processing (and again after processing). The weight of the coin before cleaning, to the tenth or hundredth of a gram, should be noted, and the coin should be weighed again after processing. A small electronic jewelry scale is an essential item for someone recording and analyzing numismatic material from a site. Please note that in order to make your records clearly understandable to others, all measurements must be metric. Never record your measurements in pennyweights, carats, thousandths of an inch, or liquid ounces. There is no reason at all to suppose that the metric system will be abandoned, and using its units consistently will enable others, from anywhere in the world, to understand your records. Using nonmetric measurements is no longer considered harmless and tolerable eccentricity.

### *Caveat: Only in America*

Before reviewing useful techniques for cleaning coins to the point of identification, we must stress that these suggestions are intended *only* for coins, tokens, and medals recovered in North America. Details of treatment for coins that have been buried for additional hundreds of years, or even more than two thousand years, are different. Specific techniques have been developed for use on ancient Greek coins of various materials and on Chinese coins that have been buried for one or two thousand years. In many cases, the patinas are very important, and numismatists strive to maintain them intact. They may, in the eyes of Old World numismatists, add beauty, interest, and even considerable market value to ancient coins. Even though an ancient coin may occasionally be found in North America, it became part of North America's archaeological record relatively recently, and these considerations generally do not apply. Different protocols may also apply to sites at which a great many coins are found, usually of common types, and the archaeologists may decide to risk sacrifice of some of the coins in exchange for fuller information about the remaining coins. Such sites are rare in North America. If you are working on material found in Europe, Africa, or Asia, refer to the many works on the numismatic archaeology of these areas.

### Some "Conservation" Procedures

When the uncleaned coin has been thoroughly examined and recorded, it may be soaked in water. Water is sufficient to dissolve or soften most things that adhere to buried coins (though certainly not all). Very gently using your finger or a soft all-cotton rag, rub the adhering material and see how easily it comes off the coin. Start on the edge, where you are less likely to damage either face of the coin. If the coin is struck rather than cast, concentrate on the areas that should have relevant inscriptions, including the date. If the coin is a cast one from Asia, concentrate on the top and bottom obverse characters of the reign name and the right-hand portion of the reverse where a Manchu mint name appears on a Chinese coin. Unless the coins have been in strongly alkaline or acid soil, at least half the coins should be identifiable after cleaning with water—not necessarily pretty but identifiable.

At this point, stop cleaning. If a coin proves to be in wonderful (or at least acceptable) shape under the formerly adhering material, and it may be appropriate for display, make a note, and advise whoever will be selecting coins for display. It is always better to let the display coins select themselves by choosing the ones that are clear and attractive without extra cleaning, than to try to prepare coins for display when they are corroded or unattractive and would need extensive cleaning. A harshly cleaned coin is not going to impress a numismatist, and usually gives a bad impression on display. As for the rest of the coins, this is the time to separate them according to material and the nature of the adhering material or corrosion that needs to be removed sufficiently to allow identification. Steel cents from 1943 are a special case. There is no need to clean them, the date is always known, and they may be distinguished with a magnet. They need merely be counted.

The washed coins should be separated into gold (a rare find), silver, copper, and its alloys, nickel or copper-nickel, lead and/or tin, and zinc. Aluminum (always tokens or foreign coins in North America) should be placed in its own category. Any token or coin clearly not in one of the above categories needs to be separated as well and its composition investigated.

If gold is unidentifiable at this stage, there is usually a reason other than corrosion. Other coins may be corroded, or may have more stubborn organic material obscuring their surfaces. If a coin of any composition is covered by organic material, such as tar, asphalt, rubber, burned pitch, or dark solidified grease, try putting it into a bowl with warm water and a little dishwashing detergent. If the deposit does not easily come off after an hour or so, drain the liquid and substitute rubbing alcohol. If this does not work, set it aside. Further instructions for reactive metals are given below after gold.

Gold is not reactive with any common material except with some strong acids. But before proceeding with a coin as though it is gold, make sure that it is indeed a gold coin. It should be identifiable to some degree, and should match a photo and description in one or another catalog. It will be heavy, much heavier than the brass alloys that sometimes resemble gold. One common traditional way to remove calcium or mixed calcium and copper-compound adhesions from gold is to slice a lemon or lime and place the gold coin into the fruit for some hours or overnight. Lemon juice, or a citric acid solution, may also be used, but the fruit will definitely not contain a too-high concentration of acid. The coin should be very thoroughly rinsed after this treatment, or better yet rinsed, then soaked in water for hours and rinsed again to eliminate any residual acid. As gold is soft, it is particularly necessary to be careful not to rub or abrade the surfaces of a gold coin. If the coin is not identifiable at this point (rarely the case with gold), we suggest consulting an expert. Not only is the market value of gold coins high, but they are usually favored for displays due to their attractiveness and bright color. You don't want to make any mistakes on a gold coin.

Silver coins that have been exposed to sulfur, or to many other materials, will be black in color. Unless the coin is intended for display, just leave it that color. Assess the identifiability of

each coin at each step, and whenever the coin becomes identifiable, quit cleaning. After soaking and washing a silver coin, it will normally be identifiable. Sure, you want it to be shiny, but restrain yourself. If it is not identifiable, there are two usual reasons at this stage. Either it is so worn that the inscriptions and date cannot be read, or it has a scale that includes calcium (from hard water) adhering to the surface. In either case, the lemon treatment described above for gold coins is often effective.

Afterward, in the case of a coin worn almost smooth, rub it lightly with an all-cotton rag, and examine it at various angles and in various lights. If it is not identifiable at all, you may be missing something and should consult a collector who may be familiar with coins found locally. If no one can identify it, measure and weigh it carefully, assess the likely purity of the silver as best you can, and record it. When a coin has been worn completely smooth, it is no disgrace to be unable to identify it. But usually, some detail can be made out, and the coin can be identified at least partially. Record whatever can be seen of the design, inscriptions, and date, and put it aside for one more look after you have reviewed all the coins found at the site.

If the silver coin had adhesions containing calcium, it will usually be identifiable after being treated with lemon and carefully rinsed. Most of the adhesions should be gone (along with the black color). If the date or mint mark is still obscured, a wooden toothpick used to force softened adhesions out of the small crevices is often effective and will usually not cause additional wear to the coin surface. Examine and consider each coin at this point, and you will normally find that it is either identifiable or cannot fully be identified due to wear rather than anything obscuring the design. In either case, stop cleaning. If some unknown material is still obscuring key inscriptions, put it aside. Cleaning with a small ultrasonic cleaning machine will be explained below.

Aluminum tokens and foreign coins are normally identifiable after washing, but the main problem with aluminum items, all deposited after 1890, is usually corrosion that involves actual missing material. There is no remedy for missing metal. Do your best with the cleaned token or coin, reading around any missing metal, but there is no point in attempting to restore metal that has been removed by chemical or electro-chemical action.

Copper-nickel coins are also not very old, and the oldest such tokens are less than two centuries old. Nickel is not very susceptible to corrosion, and most copper-nickel coins are clearly identifiable after washing. One problem often found is that early Buffalo/Indian five-cent nickels of 1913 to 1936, and to some extent those of 1937 and 1938 as well, are often missing their dates due to wear in circulation. Due to a design flaw, the date was one of the highest parts of the coin design, and it wore off after a few years in circulation. The best way to treat US nickels of this period that lack their dates is to record that fact and go on. If the date is really needed, and serious damage to the coin is not a problem, some coin dealers sell an acid preparation used to remove metal in the date area and show some vestige of the original date. We don't recommend it, as the date of a nickel is rarely a key piece of information in analyzing a site. The date of a Jefferson nickel that has been placed in backfill dirt at an archaeological site is another matter. It has been common practice for many archaeologists to place nickels of the current or just-previous year toward the bottom of backfill dirt after a dig, as a marker indicating disturbance by an archaeologist at that date. Nickels are chosen because they provide the most durability for small cost.

### *Copper, Bronze, and Brass*

While more types of coins were made of silver, the production quantities of copper, bronze, or brass coins have been much greater than all other coins combined. Some parts of North America saw few copper coins for long periods. For example, copper coins were not used in the western United States until after the Civil War. But when copper coins came, they came in large numbers. The great majority of tokens before 1890, in all three North American countries, were also made of copper and its alloys. So at most historic period sites, coins and tokens of copper alloys are likely to be the majority.

**Figure 12.19.** Maravedis of the late 1500s and early 1600s from Spain found in Florida. Photo by Dr. Ashley White.

The earliest bronze and copper coins found in the United States are from archaeological sites at Spanish settlements in Florida, generally in the St. Augustine area. A photograph of a group of such coins shows them looking different from each other as a result of differences in their patinas and in the cleaning some have received. The team that dealt with these coins followed the rule of cleaning only to a minimal degree to allow identification and not cleaning those coins that were identifiable as found. These maravedis were struck in Spain and imported to Florida to circulate as currency, though they may not have seen much circulation. Between the times they were struck and the late 1500s, an international silver inflation (similar to the international gold inflation during the California Gold Rush) resulted from the huge silver output of the Spanish colonial mints. Copper coins, whose values were usually expressed as fractions of particular silver denominations, lost value too. Smaller copper coins, set aside as having little value, are often found in groups. The workhorses of circulation, at least in most New World settlements with (generally surreptitious) active trade relationships with merchants of other nationalities, were

the silver cob coins and gold for larger purchases. Copper was simply not worth enough to be involved in international trade. While copper stayed in circulation in many places, in some places the copper was put aside, usually in a container, and may be found by archaeologists as a cache or hoard.

When a copper coin is not identifiable without destructive cleaning, and there is a need for the specific information it may provide, there are many ways to clean it. All such methods will normally leave the coin harshly cleaned, and often pitted or eroded. Do not select corroded copper coins for display, and then clean them for that purpose. Their condition will be disappointing.

After light cleaning with water, coins that are selected for further cleaning should go through an ultrasonic cleaner. A small countertop ultrasonic cleaner has a basin in which the item to be cleaned is immersed in liquid. Only a drop of dishwashing detergent should be needed in the water, and nothing else should be required. Put the coin into the liquid, and turn on the cleaner for a specified period of time, usually a few minutes. Some experimentation, after reading the ultrasonic cleaner operating instructions, will help you figure the right amount of time. As you watch, the vibration and the bubbles generated by the ultrasonic waves will remove dirt and some corrosion from the surfaces of the coin. It is often helpful to turn off the cleaner halfway through the process, turn the coin over, and turn the cleaner back on to finish the session. Wash the coin, soak it in water in a bowl to remove all detergent, and wash it again. If sufficient detail has been revealed, stop cleaning, and leave the coin to dry on a cloth or paper towel or napkin.

While commercial preparations for brass or copper cleaning are available, many do serious damage to coins. You should only use products that you have tested on nonarchaeological materials first, preferably after consulting with knowledgeable numismatists. Advice on this subject found on the Internet is mostly misleading, and often disastrous. If you are determined to sacrifice a coin's patina in hope of more fully identifying it, harsh cleaning can be done using materials that humans may consume. Lemon juice and salt make an effective abrasive and chemically active brass cleaner when applied with a tough rag. Practice first on a brass bowl or plate, and try some on nonarchaeological coins before using it on those recovered from a site. Always try the ultrasonic cleaner before resorting to harsher cleaning.

Always make sure that a coin is entirely dry and acid, salt, and detergent free before packaging it in a cardboard and Mylar holder and making notes on the holder. If in doubt as to how dry it is, leave it to dry overnight. It is desirable to arrest whatever processes have been acting on the coin or token since it entered the archaeological record, rather than allowing them to continue as the coin is stored.

### *Zinc*

Zinc coins are either from Vietnam from the 1800s, or they are from Europe from the period of World War I and later. A few zinc tokens from slightly earlier are known, but most use of zinc for tokens has been in the form of brass or white-metal alloys. There are many fairly pure zinc tokens, including state tax tokens, from the middle of World War II when some other coinage metals were set aside for military and key industrial use as "strategic metals."


**Figure 12.20.** Zinc 2-mil tax token from Kansas, 1942.

The Vietnamese coins are found together with Chinese coins at archaeological sites where Chinese immigrants lived and worked from around 1880 to the late 1890s. Zinc coins are usually silvery in appearance when first made. Later they turn a dark gray, and white or other colors when they corrode depending on what other metals are contained in the alloy. Copper alloy will turn them green or greenish white. Iron will turn them red or reddish-white, and lead will turn them a gray-white. Alloys made of three or four elements can turn a whole rainbow of colors. While edicts from the Vietnamese emperor's court nominally determined the mix of metals in the alloy, in fact the mints tended to use whatever was available at low cost. To add to the variety, some Vietnamese coins were cast by contractors located in China, including Hong Kong and Macau, particularly during the 1840s through 1860s. The alloys used in any given year usually differed somewhat from those used in Vietnam to cast identical coins.

Zinc coins that have not been buried in alkaline or acidic soils may still be in identifiable condition, even in fine condition, a century later. Zinc coins that have been exposed to alkaline or acidic water or other solutions may be eaten up, or covered with products of corrosion, and are usually very brittle. When they dry out, they may become still more brittle. They should be examined for analysis while they are still wet. There are only a few varieties of the zinc Vietnamese dong, each with clearly different inscriptions if the top or bottom of the obverse of the coin can be seen. So there is no need to clean most of them. If a zinc dong is not identifiable as to reign, it is generally enough for site analysis to note that it is a zinc dong. None were imported directly from Vietnam, so all of them traveled a single path across the Pacific in a narrowly defined span of time. They were imported into North America from southern China only during the period when they circulated in Guangdong Province, starting around 1880 (Akin, Bard, and Weisz 2015) and ending during the mid-1890s.

### *Lead, Pewter, and Tin*

Lead is less likely to be damaged by slightly alkaline environments than by slightly acidic environments. Lead tokens or medals may be eroded when exposed to acid, even very slightly acidic rainwater, and they may be very seriously eroded after a longer exposure to more acidic solutions or soils. Alloying the lead with tin, as found in some pewter alloys, reduces or prevents such erosion. And alloying the tin with lead reduces or eliminates tin pest, which reduces purer tin to gray powder in cold weather. Many tokens from Great Britain from the 1648–72 period that circulated heavily in some of the British colonies in North America, are described in contemporary newspapers and in some numismatic works as "tin" or "lead" when they were often made of alloys containing both metals, sometimes with some antimony as well—in other words, of pewter. Certainly pewter tokens are likelier to be found after three centuries, as those made from the unalloyed metals may well have degraded beyond recognition.

If at all possible, tin, lead, and pewter tokens should be subjected only to very minimal cleaning with water, and even such minimally abrasive material as soft cotton rags may impose wear and metal loss on the surfaces. Many of these tokens incurred substantial wear in circulation, and there often is little detail to find. It should be kept in mind that even if the token cannot be fully identified, the size and shape of the token, and forms of any visible letters in the inscriptions, can allow the archaeologist to identify such tokens as being from Great Britain from the period between 1648 and 1672. In many cases, this is quite enough for site analysis. Numismatists who are familiar with the series (almost all of whom live in Britain) can sometimes fully identify a token from as few as two or three letters of the inscriptions, so if even this much of the design can be made out, full identification may be possible with help.

Outside of pre-1700 settlements in the eastern states, most lead, tin, or pewter pieces are later tokens, seals, medals, weights, or industrial and plumbing artifacts. Lead has been used in plumbing for over two millennia, and the word "plumbing" is derived from the Latin word *plumbum* for lead. Despite safety regulations, there are still a few older plumbers who use lead to seal drain pipes today by melting the metal with a torch, and they often spill drops of lead that flatten out when they hit soil or the floor. The use of lead for sealing drains was nearly universal up into the housing boom of the 1960s, and untold millions of such lumps of lead are waiting for archaeologists to dig them up and mistake them for intentionally made artifacts rather than the results of minor plumbing spills. Be careful, be alert, and avoid damaging soft lead artifacts of whatever origin.

### *Iron and Steel*

Few iron or steel tokens or coins are found in North America from sites more than seventy-five years old, however, many ferrous objects of similar shape and size are found, and later intrusions into older sites may leave 1943 steel cents or more recent Mexican and Canadian coins. Stainless steel tokens and coins from the 1950s and later are unlikely to need much cleaning, as they are substantially resistant to corrosion. Other steels, and relatively pure iron, may be heavily rusted. After securing samples of adhering material, and photographing the objects, unidentifiable objects may be cleaned with standard commercial preparations. However, to avoid mistakenly treating a nonferrous object with a preparation intended for iron and steel, it is important to assess the artifact with a magnet. If it responds to a magnet, it is either of some ferrous composition, or is fairly pure nickel (and unlikely to need cleaning).

Rather than advising the archaeologist on cleaning techniques and formulas, we suggest visiting an auto parts store where the staff may give guidance in the use of their rust removal preparations. As steels are so important in industry, including the automotive industry, rust removers are a well-established product among those who clean and repair auto and other machine parts. When the rust is removed, it will leave pits and other damage to the surface of the artifact, and there are cases in which lettering or other designs visible on a rusty surface disappear when the surface is cleaned.


**Figure 12.21.** Three tokens resembling washers: Cleveland, Ohio, three-cent trolley token from 1908; "Today Vendor" slot machine token from Illinois from 1926; Mexico vending machine token.

There is little point in cleaning 1943 cents, once they are identified as such. Other iron and steel objects will usually prove not to be numismatic but to be electrical or mechanical artifacts that may be of interest to whoever is analyzing such material from the excavation. But do not overlook the possibility that token-like objects originally intended for other uses may have been pressed into use as tokens at some time, as described in Chapter 5. And some transportation tokens and other tokens were issued with holes, making them strongly resemble washers when they are corroded or dirty. Some have been used as washers, and have been found at archaeological sites serving such uses. Things are often not as they appear—a saying applicable to much of life and definitely to numismatic archaeology.

## Note

1. All periodic table images produced by Ian Akin.

CHAPTER 13

# Photographing Numismatic Materials

*Jonathan Briggs*
*With an Introduction by Marjorie H. Akin, James C. Bard, and Kevin Akin*



## Introduction

Prior to the "digital revolution," publication of photographs in printed works was a more costly and time-consuming enterprise. Back in 1987, an eighteen-page chapter on coin finds in the report on archaeological work at California's Riverside Chinatown included five figures with a total of fifty-two obverse or reverse drawings of coins (Akin and Akin 1987). Not even one photograph was included. The costs and labor required at that time precluded the luxury of photographs. Today, such a report would normally include many photographs, and every coin found would be photographed for study even if not included specifically in the report. A drawing would be used only to clarify some detail that could not be made out in a photo.

Some coins, once removed from the site and processed in the lab, may be "photographed" using a flatbed scanner. This may be a perfectly acceptable way to record images of relatively flat numismatic material. But cameras normally provide better images. All three of the authors studied, in their younger years, how to take photographs with the cameras available at the time. Most of what we learned then is irrelevant to how photographic images are now obtained, transmitted, and processed. We have been able to keep up well enough to take acceptable photographs—the great majority of the images in this book are photographs taken by the authors. But we have turned to an experienced younger expert for an explanation of some of the details on how to photograph coins with the equipment available today. Jonathan Briggs is a second-generation coin dealer at Coops Collector Galleries, a coin and stamp shop in Redlands, California, that just celebrated its 80th anniversary. He handles the photography for the dealership.

## Numismatic Photography: A Methodology

Why should we bother to take pictures of our finds, whether they are in the lab or recently recovered from 10 ft. below the surface of the earth? The answer is that memory cannot preserve all details, and that today, with the abundant availability of digital imaging, we have the opportunity to preserve images with the utmost detail, exceeding any possible strength of our own minds or the methods of the past.

Most of us have a smart phone in our pocket that can take decent photos. With just some understanding of what you are trying to accomplish you have the ability to capture meaningful and informative photos with even a cell phone. Of course it is nice to have a DSLR camera to shoot beautiful images, but sometimes your phone is all you have and you should know how to use it to create quality pictures.

Experience has shown that few understand the basics of using a handheld digital camera or cell phone camera, and we can all improve our understanding and skills. Many photographs that are submitted by coin owners seeking an appraisal for their material are of such poor quality that even the date is nearly unreadable, never mind the details of any coins. As a dealer in coins and currency I know that the smallest detail can mean everything, and it must be the same for the archaeologist. In the end, we all want a detailed photographic image and we should use the tools at our disposal to accomplish that goal.

First, let's take a look at the ideal situation for photographing coins as artifacts, as individual objects. We will assume that you already have the material in your possession, in the lab, at home, or in an office setting after it has been recovered. Now it is time to take a picture of this item so that you may record its details for analysis and future research.

### *Positioning the Camera and the Object Being Photographed*

The first step is to "fix" your camera. It doesn't matter whether you have an expensive DSLR or a Point-and-Shoot camera, it needs to be stationary. The two easiest ways to do that are with a copy stand or a tripod.

Using either you can position the lens of your camera and the object you are photographing in parallel planes; that is, the lens and the coin should be exactly parallel to each other to prevent image distortion. There are several helpful articles

published on the Internet on how to best set up equipment for digital photography of coins. A particularly helpful page is located at Doug Smith's *Ancient Coins—Digital Coin Photography: An Update in Light of New Technology* (http://www.forumancientcoins.com/dougsmith/photo7i.html). In this way you can capture all the detail of the artifact and work with the lighting for various effects. You can use a small bubble level to compare the angle of the surface of the object to the angle at which the camera is being held. It is possible to use a woodworkers' level, readily available at any hardware store, to check the relative angles of objects to the angle at which the camera is being held to be sure that they are parallel. As illustrated on the above referenced webpage, it is easier to achieve parallelism with a copy stand. Using a tripod you must make adjustments to both camera and the artifact's surface, whereas with a camera stand the camera is on a fixed arm that is attached to the shooting surface so it is much easier to accomplish parallelism.

## *Background Color for Best Results*

It is generally accepted that a white background is the best one to use with numismatic artifacts. To achieve the best results, the surface needs to be nonreflective so that you do not end up with hot spots from lights or a flash when taking the photo. If you do not get good results with the white surface because the details washout when using very bright light, try a black felt or velvet surface. A black surface absorbs quite a bit of light and does not show shadows until the light is incredibly strong. Sometimes, another color may provide a better background, and there is no harm in trying various possibilities. But generally speaking, a matte white or matte black background will work.

## *In the Field*

Of course, when you are out in the field you may not have access to a white or black flat surface. You may not be able to move an object, or you may want to photograph it ***in situ***. In those situations you still want to make sure that you fix the position of the coin, that is, make sure the item isn't in your hand or moving, and try to hold the camera as steady as possible. If possible, rest the arm holding the camera against a solid object and then use your camera accordingly. In some cases a cell phone can be a great tool for taking quick shots of items in the field, but of course using a larger format camera will get you more detail, especially if the object is fixed and the camera is on a tripod.

Most cameras today allow quick review of the photographs after they are taken, and this enables you to check your work and adjust it as you go. Particularly in the field, adjusting distance, lighting, and camera settings should be done after review of previous photographs, with the aim being maximum detail and minimum distortion.

Many coins are quite similar in appearance, so it is still important to keep notes listing each photograph, or at least each photographic subject, in order. Very similar coins may come from quite different features or depths within the site, so avoiding confusion is important.

As expensive film is no longer needed, every photo that might record useful information should be taken. When focusing on significant details, or details of coin design, it is helpful to take more than one shot with slightly different lighting and angles, so that every detail can be seen in review. It is often helpful to use measuring sticks or other indicators of size in photographs. They should be exactly as far from the camera as the artifact, so that the scale is correct. It is no longer acceptable to use nonmetric measurements. Use only metric indicators, with millimeters, centimeters, and meters marked on them.

## *Lenses*

Whether you are using a DSLR or a cell phone, your goal should be to get the camera as close to the item as possible without using the zoom feature on your camera, either digital or optical. Using a zoom function generally introduces distortion, not always, but often enough to try to avoid the problem. The goal is to fill the image sensor with as much of the object as possible in the most direct way. Try using a prime lens, that is, a lens that does not have a zoom, and therefore has fewer pieces of glass between the object and the sensor, to get the best result. An excellent camera for coin photography is the Canon EF-S 100 mm Macro. It has a fixed focal length and no zoom, so the camera may be several inches away from an object and the screen is still filled with the image. The camera acts as if the lens is always zoomed in close to the object yet the clarity is phenomenal. A macro lens, however, is not a lens designed for use in day to day situations, this is a camera that should be reserved for its specific purpose of taking close-up images.

Selecting the aperture can be tricky, but it can also be incredibly easy. The aperture is the term for the measurement of how much the shutter opens when the photograph is taken. The wider the aperture, the more open the "window" and the more light enters the camera. However, the larger the aperture, the more light used to reveal details, but at the same time, the depth of field will be reduced in proportion. An aperture of 2.8 is very wide, allowing a lot of light to hit the sensor, but it makes the depth of field (the amount of depth in the field that can be in focus) very shallow. Fortunately that is not a problem for coins, as they are all pretty much on one plane, with very little depth of field. By leaving your aperture at 2.8, you will be able to have a faster shutter speed that will minimize shaking or movement.

If you are taking a photo of something that is much more three dimensional you will want more depth of field, and you will need a tighter aperture of 5.6–9.0. Such settings allow the entire object to be in focus. However, tighter apertures result in slower shutter speeds, which will, in turn, require more light (higher exposure setting) or the use of a tripod. In general, if you can have your shutter speed at 1/60 sec. or faster, you will minimize the effect of any shaking, and the result will be a higher quality photograph.

Of course, a cell phone camera will handle all of the settings for you. All you need to do is touch the screen where you want the camera to focus and take the photo.

CHAPTER 14

# Resources for the Identification of Coins and Tokens


## Basic Resources for Identification and Analysis

Numismatic archaeologists need to assemble pertinent reference materials in order to identify coins, tokens, and medals that were minted or issued in their subject area. While it may be relatively easy to find sources for official government issues that are known to have circulated in the study area, more local information can be a challenge to find. The geographical coverage of reference works should include local, regional, and extra-regional ("foreign") coins, tokens, and medals. For example, a numismatic archaeologist working in the upper Midwest of the United States would benefit from keeping basic reference materials (books, catalogs, articles, etc.) germane to the United States, nearby Canada, and even the Spanish American colonies and Mexico whose coins once circulated in the region. Although more challenging, local and regional reference materials focusing on tokens can be identified and located.

Some non-numismatic references are useful as well. City directories, census rolls (from 1790 through 1940 for the United States) for the immediate neighborhood, and local histories are very helpful. Some of these, such as census records, are usually available online. Others may only be available at a local library or at a state or university library somewhere in the study region. When older foreign coins are found, and some are likely to turn up almost anywhere, it may be helpful to have a book listing the kings and queens of all countries, as this can provide clues to the country of origin and general time period of a coin, even when the date cannot be read. A Spanish-English, English-Spanish dictionary is a basic necessity either in Mexico or the United States, as tokens inscribed in the language of the other country have been used in each country. And coins, tokens, and medals in both languages may be found anywhere near the border and farther away from the border as times goes by. Similarly, a French-English, English-French dictionary would be needed for Canada and for areas in the United States close to the French-speaking areas of Canada. Regional idioms need to be considered when interpreting some artifacts, so be sure that your source is appropriate to the area.

### *How Numismatic Resources are Created*

Most books and articles about coins, tokens, and medals were written for and by collectors. For a book to be published without a big monetary loss, it needs a base of likely purchasers. (This is less true today than it was a decade ago, due to the availability of services that permit the printing of one book at a time from electronic files, and the increasing availability of electronic book readers that allow access to a publication without any printing at all. This is the case, that is, with books written, edited, and prepared for publication with the unpaid labor of enthusiasts. The economics are very different when labor costs must be factored in.) The likely purchasers of a book about the tokens of a particular area are the collectors of tokens of that area. This generalization applies to coins too, but the coins of Canada, the United States, and Mexico are quite popular. Any high-quality book about them is likely to sell well.

The basic prerequisite for the production of a specialized book about numismatic material is a researcher who accumulates the required information, from a personal collection and from the collections of museums and universities, of other collectors, and from dealers in the specific series of coins, tokens, or medals. Auction catalogs must be consulted, and articles in all sorts of publications must be reviewed. It is very helpful to have other members of a collectors' club to consult as well. The researcher normally does all this work without pay, and normally makes no money from the publication of the book or article. Except for the actual printing, all work on the book is the unpaid labor of enthusiasts, who must be recruited by the researcher or a society devoted to such research. Such researchers are rare, and not all states have yet been covered by published catalogs.

### *Standard Catalogs*

For the basic reference series on coins of the world since 1601, including the three countries of the North American mainland, the *Standard Catalog of World Coins* series from Krause Publications is recommended. While they are not cheap, they are inexpensive by present standards at under $100 per volume, with

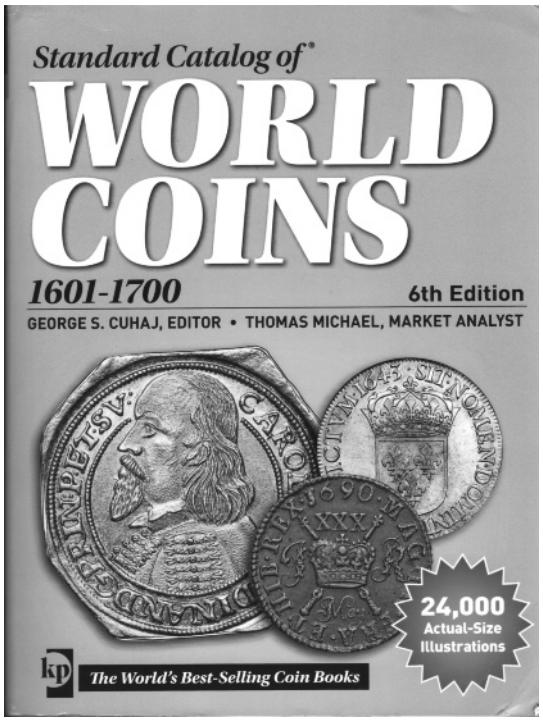
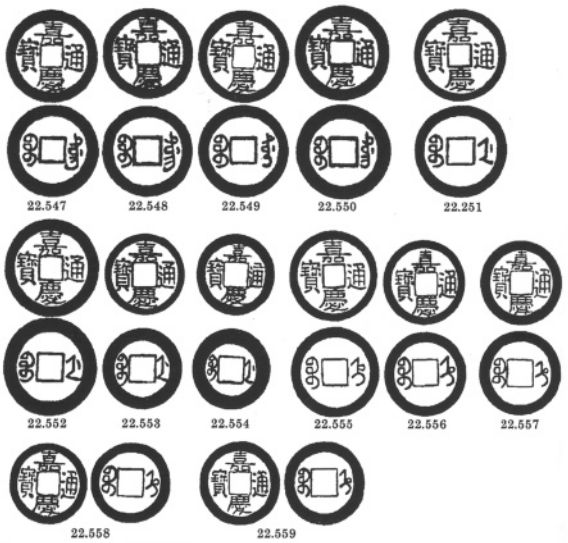



**Figure 14.1.** Volume 1 of the *Standard Catalog of World Coins*, covering 1601 to 1700. Cover reproduced with permission from Krause Publications.




**Emperor Ren Zong (1796-1820).**
Obv: 嘉慶(庆)通寶 *Jia Qing tong bao.*
**Dongchuan, Yunnan.** Rev: Boo dung left and right.

| | | | | |
|---|---|---|---|---|
| 22.547 | Closed six stroke *bei*. | *1810-18.* | FD2344, S1498 | 15 |
| 22.548 | Different form of dung. | *1810-18.* | | 15 |
| 22.549 | Dung written like ?dui. | *1810-18.* | | 10 |
| 22.550 | Seven stroke *bei*. | *1819-20.* | | 15 |

*Dongchuan delayed reopening in 1796. It was open between 1799 and 1801 recasting small coins (**22.543-45**). It reopened again in June 1810 with 10 furnaces casting 44,887 strings a year. The introduction of the dung mint name is not mentioned in the records; it must have been a local initiative.*

**Hangzhou, Zhejiang.** Rev: Boo je left and right.

| | | | | |
|---|---|---|---|---|
| 22.551 | Board of Revenue type. Closed six stroke *bei*. | 1796-*98.* | FD2349, S1503 | 15 |

Coastal Province types.

| | | | | |
|---|---|---|---|---|
| 22.552 | Closed head, two dot *tong*. | *1799-1808.* | | 15 |
| 22.553 | Smaller coin. | *1799-1808.* | | 15 |
| 22.554 | Protruding head, two dot *tong*. | *1809-20.* | | 15 |

**Baoding, Zhili.** Rev: Boo jyi left and right.

| | | | | |
|---|---|---|---|---|
| 22.555 | Closed six stroke *bei*. Large 吉 *ji* in 嘉 *jia*. | 1796-*99.* | FD2346, S1501 | 15 |
| 22.556 | Small 吉 *ji* in 嘉 *jia*. | *1799-1802.* | | 15 |
| 22.557 | Open six stroke *bei*. 口 *kou* in 嘉 *jia* rectangular. | *1803-15.* | | 15 |
| 22.558 | 口 *kou* in 嘉 *jia* trapezoidal. | *1810-15.* | | 15 |
| 22.559 | Board of Revenue Type C. Cf **22.465**. | *1816-20.* | | 14 |

**Figure 14.2.** A page from Hartill's *Cast Chinese Coinage*. Note the use of traditional rubbings and drawings as illustrations. Reproduced with permission from David Hartill.

substantial discounts often offered. Specific volumes cover the coins of 1601 to 1700, of 1701 to 1800, of 1801 to 1900, of 1901 to 2000, and of 2001 to the present. With over 146,000 actual-size photographs of coins, the five volumes contain over 7,800 pages. While there are many books on the coins of specific countries and specific periods, the Krause Publications series on world coins really has no competitor.

Most US states, many Mexican states, and Canadian provinces have had active Chinese immigrant communities of various sizes. At nearly all such sites, Chinese coins will be found, often with some Vietnamese and Japanese coins as well. The coins were not used as currency in America but had several noncurrency uses, as detailed in Chapter 4. While most such coins are from the Qing dynasty (1644–1911), a few coins produced as long ago as 300 BCE may be encountered. The best general reference now available for Chinese coins of the 2,500 years ending in 1911 is David Hartill's *Cast Chinese Coins: A Historical Catalogue* (2005). One reason it is superior to previous works, in addition to the usual new discoveries and more recent research that have enabled Hartill to improve his accuracy and list more coins, is that all Chinese words are given in the official ***Pinyin*** script, the modern standard for rendering Mandarin inscriptions in our Roman alphabet. Just as all measurements should be metric, all Mandarin Chinese words should be romanized using Pinyin in records and reports. To do otherwise is to sow confusion, and make things difficult for other scholars. Practically every book and article in this book's bibliography may be useful to someone analyzing numismatic material that turns up in North America, but the bulk of the tokens and medals that will turn up in a particular area may be found in a few references for that particular area. Some of the material not listed in those references may be found online. Be acutely aware that much of the "information" that comes up will be arrant nonsense. Consider the sources, and

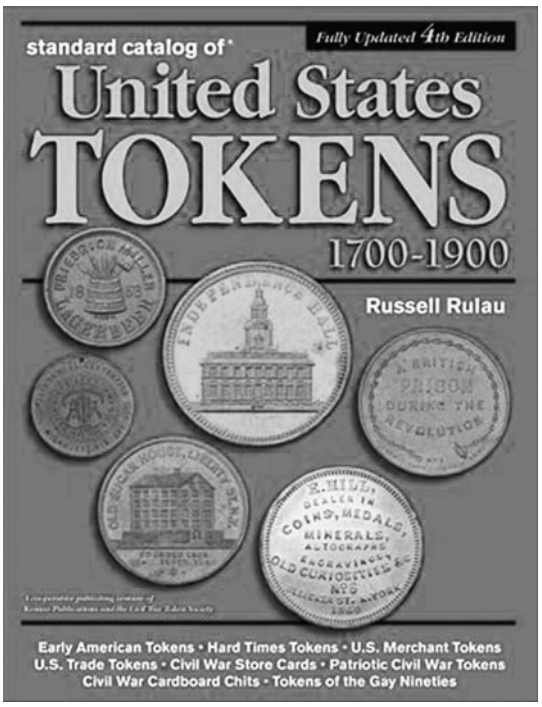



**Figure 14.3.** Rulau's *Standard Catalog of United States Tokens 1700–1900*, 4th Edition. Cover reproduced with permission from Krause Publications.

be highly skeptical of the speculations of metal detectorists and the claims of sellers of numismatic artifacts. Search engines are particularly helpful in locating information about a specific piece whose inscriptions may be entered, sometimes adding the word "coin" or "token" to focus the search.

The basic reference work for tokens of the United States before 1900 is Russell Rulau's *Standard Catalog of United States Tokens 1700–1900* (2004). While it is out of print at the time of writing, it can be found used, though not inexpensively. A reprint or a new edition would be very helpful, and we can hope that the publishers come to agree. While this catalog has good coverage of the tokens of the Hard Times and the Civil War, and thousands of other tokens and small medals as well in its 824 pages, it omits transportation tokens and political campaign pieces after 1845, amusement tokens, shell cards, Indian and post trader tokens, military tokens, prison tokens, and medals over 33 mm in diameter. Other catalogs must fill in the gaps.

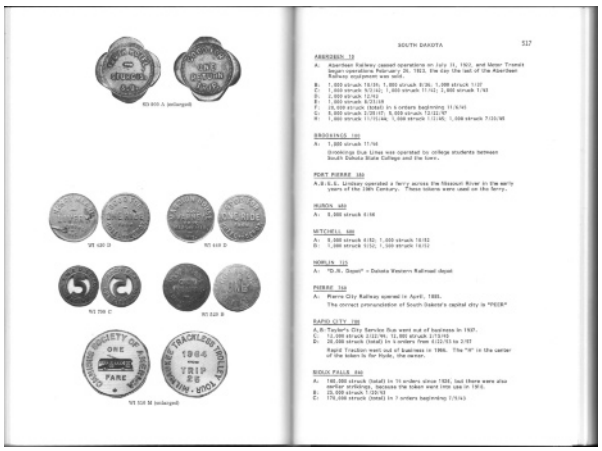


**Figure 14.4.** Two pages from the *Astwood-Coffee Catalog*, Volume II, showing dates and other available detailed information about specific tokens. Courtesy of American Vecturist Association.

## *Specialty Catalogs Covering Specific Categories*

A very large category of tokens, of which some can be found in almost every state, is the transportation token. The basic reference for transportation tokens north of Mexico is *The Atwood-Coffee Catalogue of United States and Canadian Transportation Tokens*, Volume I (Coffee and Ford 2007). This sixth edition lists all known tokens used for fares, for tolls, and for other transportation purposes all the way up to the early twenty-first century. As most state token catalogs omit transportation tokens, this is a particularly helpful volume. Additional historical information, much of it useful to the numismatic archaeologist, is given in Volume II of this series, subtitled *"History and Encyclopedia of Transportation Tokens."* The current edition is the Fourth, published in 1984. Both books are available from the American Vecturist Association, easy to find online.

Other books are available on specific kinds of tokens of the United States and sometimes Canada. A few also include Mexico. Some examples cover amusement tokens (Alpert and Smith 1984), lumber and turpentine company tokens (Trantow 1978), military tokens (Cunningham 1995), Masonic tokens (King 1972), bimetallic tokens (Schenkman 1990), and tax tokens (Malehorn and Davenport 1993).


**Figure 14.5.** Some helpful national or continental references covering specific kinds of tokens.

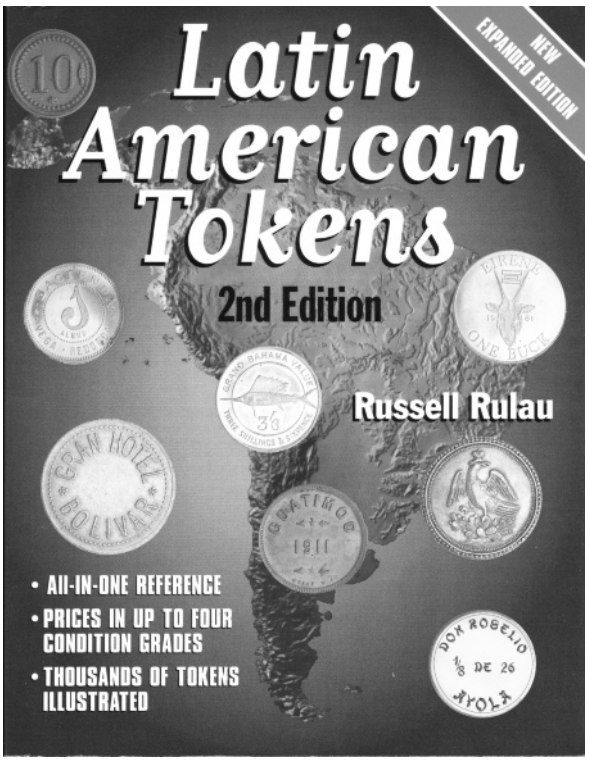



**Figure 14.6.** Rulau's *Latin American Tokens*, 2nd Edition. Cover reproduced with permission from Krause Publications.

The best-organized listing of Mexican tokens is in Russell Rulau's *Latin American Tokens,* 2nd Edition (2000), but the listing only goes to about 1920 (with a few later ones included). It excludes some of the most common categories, including transportation tokens, amusement tokens, casino chips, telephone tokens, and almost all plastic tokens. Grove's *Tokens of Mexico* (1989) fills some of the gaps.

*The Charlton Standard Catalogue of Canadian Colonial Tokens*, by W. K. Cross (2015) is the comprehensive standard work covering Canadian tokens up to 1867. There are a number of studies covering particular provinces or specific types of tokens after Confederation, but some are quite outdated or very hard to find. Some of the works in the libraries of the authors cover tokens of Alberta (Stewart 1987), British Columbia (Hill 1980), and Yukon (Hill and Simpson 1990). Others recently available from online sellers include Fred Bowman (1972) *Tokens of Quebec*; James W. Astwood (2007) *An Illustrated Guide to Manitoba Trade Tokens*; and Harry N. James (2013) *A Guide to Ontario Tokens,* 2nd Edition.


**Figure 14.7.** A sample of the token catalogs of single states or provinces.

The Token and Medal Society, and several small publishers, have produced many books on the tokens of particular states. Costs of the books are kept low, an obvious benefit to the collector members, through unpaid volunteer labor and small publication subsidies from TAMS and other donors. Others have been self-published, though often of high quality and using expert, but unpaid, editorial assistance. Each has shortcomings, and most omit whole categories of tokens, but each is a basic necessity for someone analyzing numismatic archaeological finds in a specific state. For most states, we list a single reference, though it is often helpful to have others as well. Many articles in journals cover more specific categories or areas, but we haven't attempted to list them here.

Early tokens and medals of the New England states (up to 1900) are fairly well covered in the references already listed. Unfortunately, no book covering the modern tokens of any New England state has yet been published. This is the only section of the country so lacking in references. The researcher who needs to identify tokens of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, or Maine would be well advised to consult the *Token Catalog* (http://tokencatalog.com/) for possible identifications. It is possible that most of New England will never be covered by the state-by-state printed references that cover most of the country, and that new electronic references will substitute for traditional paper.

## *Token Resources by State*

### List of Resources

Alabama: Wood (1995).
Alaska: Benice (1994).
Arizona: Spooner (2010).
Arkansas: Robinson (1985).
California: Kappen (1976) and Kappen (1997).
Colorado: Pritchard (2004).
Connecticut: A catalog is reportedly being prepared by Manuel Ayala.
Delaware: Miller (1988).
District of Columbia: Schenkman (1982).
Florida: Clark (1980).
Georgia: Partin and Partin (1990).
Hawai'i: Hawai'i is outside the area covered by this book, as are all US territories and possessions.
Idaho: Schell (1970).
Illinois: Vacketta (1983).
Indiana: Wagaman (1981).
Iowa: Ferguson (1984).
Kansas: Johnson and Oller (2005).
Kentucky: None known.
Louisiana: Crawford and Farber (1996).
Maine: None known.
Maryland: Schenkman (1986).
Massachusetts: None known.
Michigan: Cunningham (1987).
Minnesota: Johnson (1974).
Mississippi: Chatham (1990).
Missouri: None known. A catalog project announced by Larry Grinstead and Bruce Smith is understood to have stalled, but the data has been provided to www.tokencatalog.com for the use of researchers.
Montana: Gould (1978).
Nebraska: Nebraska Token Collectors Club (1999).
Nevada: Hoskins, Schilling, and Dunn (1990).
New Hampshire: None known.
New Jersey: None known.
New Mexico: Schilling and Schilling (1995).
New York: None known.
North Carolina: None known.
North Dakota: Peterson and Johnson (1992).
Ohio: Lipscomb (1996).
Oklahoma: Chadwick (2007).
Oregon: Hemphill (1992).
Pennsylvania: Aqua (2000).
Rhode Island: None known.
South Carolina: Chibbaro (1990).
South Dakota: Meidema (2009).
Tennessee: Copeland (1998).
Texas: A serial catalog in four sections has been published: Fowler, Roberts, and Strough (1973); Fowler and Strough (1979); Fowler and Ribbe (1984, 1993).
Utah: Campbell (1998).
Vermont: None known.
Virginia: Schenkman (1980).
Washington: Ericson (1999).
West Virginia: Schenkman (2009) and Edkins (2002).
Wisconsin: Johnson (1993).
Wyoming: Bowker and Lee (1999).

Resources such as the ones listed above may be difficult to find in print. They require a large amount of work, and are rarely profitable. The changes in methods of publication that are reshaping the way we receive information may make it easier to find some of the scarcer items in digital formats.

## *Kleeberg's Compilation of Coin Finds*

John M. Kleeberg's (2009) *Numismatic Finds of the Americas: An Inventory of American Coin Hoards, Shipwrecks, Single Finds, and Finds in Excavations* is reviewed here at some length, as it will often be cited as a reference to coins that have been recovered in specific areas. But before using it, the researcher should keep its limitations clearly in mind. It is not, and does not pretend to be, a comprehensive list of coin finds from archaeological sites, or even from chance finds. It is basically a list of coins that have been found under circumstances of notoriety or publicity, which have been noted in major newspaper stories or articles in the numismatic press. A hoard of large gold coins usually makes the papers, but ten times as many common base-metal coins would rarely be noted publicly. Even the articles in the numismatic press are limited to a few sources, and some very large finds of Chinese and Vietnamese coins, and Nuremburg jetons, that happen to be known to the authors, never made it into Kleeberg's compilation despite having been reported in numismatic and local papers. His list reflects less than one percent of all archaeological finds, and those included are almost entirely limited to finds of great monetary value or public interest.

Kleeberg's (2009:346–48) index to Special Types of Finds and to Named Hoards reveals that his data sample is derived from finds discovered in containers (167), archaeological excavations (150), shipwrecks (142), foundation deposits (31), funerary deposits (29) and coin hoards (13). Additional types of finds also included coins found in Philadelphia Highway finds (3), crib hulks (2) and a miscellaneous context, all one each: Donner Party, a fort, a payroll, an expedition payment, in a deposit, and as an ***isolated*** find.

Two tables summarize some categories of data reported by Kleeberg. Most of the gold, of course, is from shipwrecks or banking hoards, as dropped or buried gold coins are recovered by the owners (or would-be owners) whenever possible. Keeping in mind the bias toward exciting and newsworthy finds, it is still possible to use this list to get some idea of the kinds of

**Table 14.1.** Coins Found in North America, on Land, and in Shipwrecks

| **Coin Issuer** | **Commonly Found Denominations—2 or More Known Examples of Each Denomination** | **Less Commonly Found Denominations—at least 1 Known Example of Each Denomination** |
|---|---|---|
| Austria | Maria Theresa thaler | Kreuzer and other thalers |
| Bolivia | 8 soles | ½ sole, 2 soles, scudo |
| Brazil | | 500 reis, 1,000 reis, 2,000 reis, 6,400 reis, 10,000 reis, 20,000 reis |
| British colonies:<br>Bahamas, Canada, Connecticut, Hudson's Bay Company Territories, Lower and Upper Canada, Montserrat, New Brunswick, Newfoundland, Nova Scotia, Rosa Americana, Saint Vincent, Tobago, Upper Canada/Canada West, Virginia, William Pitt, Pennsylvania, Indian Peace Medal. | Halfpenny, penny, 1 cent, 5 cents, 10 cents, twopence, unspecified tokens, blacksmith copper, Northwest Company token, North American token, Indian peace medals. | Counterstamped 8 reales, William Pitt halfpenny token, Kittaning destroyed medal, black dog, 2 ¼ pence. Higley threepence, 20 cents, $2.00. |
| Canada | 1 cent, 5 cents, 10 cents, 25 cents, and 50 cents | Yukon token |
| Central American Republic:<br>Costa Rica, Guatemala, Honduras. | 8 reales | Sun and volcanoes counterstamp |
| Chile | 8 escudos | Escudo, 50 centavos |
| China:<br>Mainland and Hong Kong | Cash (wen), 1 cent | 10 cash, 10 cents |
| Costa Rica | Counterstamped coins | ½ onza, 1 escudo, 2 escudos, and 8 reales |
| Denmark | 2 skillings | ½ skilling, skilling KM, frederik d'or, 2 frederik d'or, 2 christian d'or |
| England | Farthing, copper and tin halfpenny, silver penny, threehalfpence, ½ groat, groat, sixpence, shilling, ½ crown, 2 guinea, tokens, medals | Elephant halfpenny, silver halfpenny, twopence, Maundy twopence, threepence, double crown, ¼ laurel, ½ guinea, laurel, unite, jeton, and coin weight |
| English colonies:<br>Maryland, Massachusetts, Newfoundland, Somers Islands (Bermuda) | James II $^1/_{24}$ real, Lord Baltimore denarium, oak tree twopence, sixpence, shilling, pine tree shilling, willow tree shilling, oak tree shilling, Indian peace medals | New England shilling, oak tree threepence, New England sixpence, lead token, |

*(Table 14.1 Continued)*

*(Table 14.1 Continued)*

| Coin Issuer | Commonly Found Denominations—2 or More Known Examples of Each Denomination | Less Commonly Found Denominations—at least 1 Known Example of Each Denomination |
|---|---|---|
| France | Liard, 1/20 écu, 1/6 écu, 1/5 écu, 1/4 écu, 1/3 écu, 1 écu, 1/2 sol, 1 sol, 2 sols, 4 sols, denier tournois, double tournois, 6 deniers "dardennes", 15 deniers sols, 30 deniers, douzain, louis d'or, 5 centimes, 30 sous, 1/2 franc, 5 francs, 20 francs, 2 louis, jeton, medals, misc. silver coins | 15 sous, 20 sous, 1/12 écu, 10 centimes, 20 centimes, 1/10 écu, 1 franc, 40 francs, Anglo-Gallic gros |
| French colonies: Gloriam Regni, Cayenne, Guadeloupe, Martinique, Windward Islands | 2 sous, counterstamped 6,400 reis, 9 deniers des colonies françoises | 3 sous, 5 sous, sol tampé, 12 deniers, 12 sols, |
| French states: Burgundy, Dauphiné, Navarre/Béarn, Navarre. | Douzain | 1 sol, 2 sols |
| German states: Baden, Bavaria, Bayreuth, Brunswick-Lüneburg, Brunswick-Wolfenbüttel, Electoral Palatinate, Frankfurt/Main, Göttingen, Hanover, Hesse-Cassel, Lübeck, Nuremberg, Prussia, Saxony, Schwarzenberg, Soest, Trier, Württemberg | 1 thaler, 5 thalers, 10 thalers, pfennig, jeton, medals | 1/24 thaler, 3 pfennigs, 1 heller, 1 ducat, 1 kreuzer, 20 kreuzers, 1 sechsling, 1 frederick d'or, 2 frederick d'or, Dreiptermännchen |
| Germany | | 1 mark, 10 marks |
| Great Britain | Farthing, halfpenny, twopence, sixpence, shilling, 1/2 crown, crown, sovereign, guinea, Bank of England small head of George III counterstamp on 8 reales, evasive halfpenny, jeton, tokens, medals | 1/2 sovereign, 5 guineas, Washington Liberty and Security penny |
| Ireland | Farthing, St. Patrick's farthing, Wood's Hibernia farthing, copper halfpenny, Wood's Hibernia halfpenny, copper penny, gun money, Voce Populi halfpenny, tokens | Sixpence, shilling, medal |
| Japan | *Mon* | 100 *mon* |
| Mexico | 2 reales, 8 reales, 8 escudos | Real, peso, 10 pesos, escudo, gold coin |
| Netherlands | Stuiver, 2 stuivers, duit, lion daalder, jeton, medals | Cent, 1/2 duit, 1/2 lion daalder, ducaton, 10 gulden, 3 gulden, 5 gulden, gold florin, schelling |
| Peru | 8 reales, North Peru 8 reales, | 2 reales |
| Portugal | Ceitil, 5 reis, 10 reis, 1/2 tostão, cruzado, 1,600 reis, 4,000 reis, 4 escudos (6,400 reis), 12,800 reis | Copper coin, silver coin, 40 reis, 60 reis, 1/2 cruzado, 1/2 San Vicente, 2000 reis, 3200 reis, |
| Portuguese colonies: Brazil | 300 reis counterstamp, 600 reis counterstamp, 1,600 reis, 2,000 reis, 3,200 reis, 4,000 reis, 6,400 reis, 12,800 reis | 5 reis, 10 reis, 20 reis, 640 reis, 1,000 reis, 10,000 reis, 20,000 reis, gold coin |
| Russia | 2 kopeks, 5 kopeks | 5 roubles |
| Scotland | Bawbee, sword and scepter | Twopence, 20 pence, plack (4 pence) |
| Spain | Maravedi, 2 maravedis, 4 maravedis, silver coins, 1/2 real, 1/2 real (1/4 pistareen), real, Real (1/2 pistareen), 2 reales (pistareen), 4 reales, 8 reales, escudo, 2 escudos, 8 escudos, 25 pesetas, medals | Ardite, dinero, 40 centimos, peseta, 2 pesetas, 5 pesetas, 4 reales de vellon, 20 reales, 1/2 escudo, 4 escudos |
| Spanish Colonies: Bogotá, Cartagena, Cuzco, Durango, Guatemala, Lima, Mexico, Panama, Popayán, Potosí, Santiago, Santo Domingo, Texas, Zacatecas | 1/4 real, 1/2 real, real, 2 reales, 3 reales, 4 reales, 8 reales, escudo, 2 escudos, 4 escudos, 8 escudos, 4 maravedis, gold coins, silver coins, San Antonio Garza Jola, Indian Peace Medals | hearts |

*(Table 14.1 Continued)*

*(Table 14.1 Continued)*

| Coin Issuer | Commonly Found Denominations—2 or More Known Examples of Each Denomination | Less Commonly Found Denominations—at least 1 Known Example of Each Denomination |
|---|---|---|
| Spanish states: Castile and Leon, Navarre | Blanca | ½ blanca, ½ real, seisén, |
| Sweden | ½ skilling | 2 öre |
| United States | California fractional gold, private gold, Connecticut copper, Nova Constellatio copper, Washington piece, regulated (counterstamped) gold coin, Fugio 1 cent, New Jersey copper, Brasher & Bailey/Mould & Atlee/Manchin's Mills halfpenny, Nova Eborac copper, Vermont copper, ½ cent, 1 cent, 2 cents, nickel 3 cents, silver 3 cents, nickel 5 cents, silver 5 cents, 10 cents, 25 cents, 50 cents, silver dollar, gold dollar, gold 3 dollar, gold $2.5 dollar, gold 5 dollar, gold 10 dollar, gold 20 dollar, Humbert/USAOG $10, Humbert/USAOG $50, Indian peace medals, tokens, medals | Confederatio copper, Georgius Triumpho copper, Immune Columbia/Nova Constellatio copper, bar copper, John Chalmers threepence, John Chalmers sixpence, John Chalmers shilling, North Swansea bungtown halfpenny, pine tree copper, Ephraim Brasher counterstamped guinea, Ephraim Brasher doubloon, Bechtler $1, Bechtler $5, gold bars, coin weights |
| Vietnam: Annam, United Dai Viet | Cash (dong) | |

**Table 14.2.** Coins Less Commonly Found in North America

| Other Coin Issuers | Denominations Known from Only a Single Example |
|---|---|
| Argentina | unspecified |
| Barbados | pistareen |
| Central America | Silver coins |
| Columbia | 2 escudos |
| Courland | Riga silver coin |
| Danish colonies | 12 skillings, 24 skillings |
| Dominican Republic | ¼ real |
| Egypt | 5 qirsh |
| Greece | 1 drachma, 5 drachmai |
| Guatemala | 8 reales, 16 pesos |
| Italy | lira |
| Italian states: Aquilea, Fosdinovo, Genoa, Naples and Sicily, Napoleonic Kingdom of Italy, Parma and Piacenza, Sardinia, Tuscany | Tallero, soldo, luigino, minuto, 4 ducati, 6 ducati, 20 lire, tallero, medal |
| Norway | Silver penny |
| Poland | medal |
| Rome | Constantine era coin, Nero era coin |
| Siam (Thailand) | counterstamp |
| Spanish Netherlands: Antwerp | Liard, ducatoon, golden fleece counterstamp |
| Thailand | counterstamp |

coins that may turn up. The material in Kleeberg's book has been widely used by collectors and may have informed some of them, even if they did not recognize the limitations of the sources. The following data is derived from the index to Contents of Finds (Kleeberg 2009:349–58).

Kleeberg's index identified other kinds of coins or coin related objects including forty-eight counterfeit coins, forty-eight counterstamped coins, sixty cut or clipped coins, twenty-nine holed coins, three bent coins (witch pieces), two love tokens, and seven coin weights.

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# Moving Forward: How Can We Make Collaboration Work?

## A Stubborn Problem

In the essay "Passionate Possession: The Formation Processes of Private Collections" (Akin 1996:102–28), the reasons why people collect things were systematically described so that archaeologists and others working in related sciences, such as museum studies and historic preservation, might see the materials brought to them by the public in new ways. The article also suggested that equating collectors with looters was not helping to solve the problems created by the black market in antiquities and related looting of sites. Twenty years later it is still necessary for archaeologists, collectors, and everyone working with the material culture of the past, to learn to recognize and understand each other—or the losses will be immeasurable.

One important motivation for collecting coins and tokens, as well as for collecting other artifacts, is the desire to connect oneself with the past. People like to collect old things and they like to find ways to connect with the past, especially if it is their own or their family's past. This desire has had a strong impact on the fields of inquiry that rely on the material culture of the past for their investigations, primarily archaeology, but also, to a lesser extent, museum studies, material culture studies, history, and art. The long relationship between collecting and archaeology has had an impact on both, and an interest in collecting objects from the past was a strong impetus for many archaeologists to enter their field.

Before going further, we should emphasize that most coin collectors have little impact on North American archaeological sites. The overwhelming majority of coins in private collections were never part of the archaeological record. They have been in circulation or in the hands of bankers, hoarders, collectors, or dealers since their original production and release from the government treasury for which they were minted. This is true even in Europe, Asia, and Africa, and is overwhelmingly the case in North America. And only a small fraction of the coin collectors on our continent have the interests and resources needed to collect gold (or even silver) coins from old hoards or the wrecks of treasure ships. The great majority of coins recovered by archaeologists in North America have little if any value to collectors, as they are common low-denomination coins in worn or damaged condition, often severely corroded or eroded. The coins that create controversy and excite greed are very much the exception, something we should keep in mind as we consider this subject.

Archaeologists and people working in related fields feel a responsibility to describe the past as accurately as possible, to describe their discoveries in publications, and put them in appropriate storage so that they will be secure for the future. Many feel that this is the only way to build an accurate understanding of the people who lived before us, and that all "important" unearthed artifacts need to be stored where they can easily be accessed by researchers and sometimes displayed for the enjoyment and education of the public.

Many archaeologists see these goals in direct contrast to the activities of collectors. They think that collectors always want to keep their collections of artifacts as private holdings and that collectors are not interested in sharing information. Archaeologists sometimes portray collectors as not quite up to the task of appropriately caring for artifacts and of being incapable of safely preserving them. It is sometimes assumed, often incorrectly, that collectors do not maintain provenience information for their specimens. These views have rendered the relationship between archaeologists and collectors difficult, at best. While it is easy to say that collectors are the source of the problem of looting sites, it is a considerable oversimplification of the problem. It is time that we recognized that several decades of this view and the policies that are derived from it have not reduced looting.

There are really several different problems that obstruct collaboration between archaeologists and collectors. First, there are conflicting ideas about how artifacts should be owned, distributed, and displayed. These ideas need to be reexamined in light of new technology. How many artifacts currently on display in museums will be replaced by replicas as soon as 3D technology reaches a level that makes such substitutions possible and within budget? Does the public care if they are seeing an original or a replica of most artifacts? And what will happen to the black market in artifacts when it becomes even easier

than it has been to create replicas? Under what circumstances are researchers able to conduct studies with 3D replicas, and when are originals really needed?

There are so many new considerations introduced by technology that a blanket ban on any type of information exchange seems counterproductive to the goals of archaeology. New considerations introduced by new technologies are particularly significant when applied to studies of archived material from past excavations. The relatively new technology of 3D printing has been welcomed by many archaeologists and curators because it allows many more people a chance to see how archived artifacts that need to be protected from damage actually look, feel, and act like when manipulated (McCuiston 2013).

**Figure 15.1.** Daniel Seidman (left) demonstrates the scanning of museum artifacts and fossils to produce 3D-printed replicas (right). The display was set up in June, 2015, in the lobby of New York's Metropolitan Museum of Art.

Many collectors view themselves as rescuers, saving artifacts from the oblivion of off-site curation facilities. These collectors have often expressed a lack of confidence in museums and universities, sometimes saying they believe that donated objects are sold off, stolen by curators, or left to collect dust in forgotten basements and storerooms. There is no doubt that these stated reasons for not cooperating with academics are, in part, simply justifications for their activities. However, current museum practices of putting only a small sample of their holdings on display at a time, combined with the lack of funding for changing permanent exhibits, supports this very common folk belief. Placing museum catalogs online is going a long way to allay these concerns. Collectors of material not deemed to be of "museum quality" are especially adamant in their belief that they are the better guardians of the material, that they understand the material better than formal institutions, and that they have a vested interest in protecting it. Many repositories are ***de-accessioning*** their holdings in this era of reduced funding, which has only increased these concerns.

There are major misunderstandings and many mistaken assumptions by both collectors and archaeologists about each other that need clarification in order to discuss these differences successfully. If archaeologists learn the language of numismatics, communication can be improved. If organizations that host professional archaeology conferences will stop refusing program slots or publications to anyone who wants to discuss artifacts that were recovered legally but privately, and were willing to judge the value of research on a case by case basis, some advances could be made. In a world where museums, even national museums, are not only being looted but are also in some cases being privatized or dispersed, how can we refuse to work with those who now possess the artifacts? If archaeologists are to engage the public successfully they have to recognize their responsibility to explain how that is done, what can be learned when context is preserved, and why improperly obtaining artifacts hurts such efforts. Archaeologists have to learn to work with people who have made mistakes. In turn, coin and token collectors, bottle collectors, metal detector enthusiasts and history buffs need to be responsible with their collections, retain any information they obtain with their artifacts, and find ways to make their collections and their data available to researchers and other collectors while maintaining ownership. It is possible to teach people how to do these things, and the professionals have the responsibility to lead the way.

Is collaboration possible? Can professionals and collectors working together improve our understanding of the past? How about the artifacts—what is best for them? And where does the human desire for possession of artifacts fit into the picture? These complicated questions about where and how artifacts are best kept will continue to defy solutions until all of our assumptions and beliefs about the "others" are examined.

Most archaeologists would agree that the serious scholar should not participate in the process of clandestine excavation and illegal export, or participate in artifact sales to private collectors. Anyone who agrees to "authenticate" or appraise the value of pieces for auction sales or the catalogs of antiquities dealers is regarded with disapproval in archaeological and museum circles. Peer pressure is placed on serious scholars to avoid working with materials that have not been properly excavated and documented in the hope that their strong disapproval will help stem the tide of looting. Debates have arisen over the extent of cooperation that should be extended to the holders of such materials, and the effect that sanctions have on the black-market trade. The simple fact is that most of the trade in numismatic materials is not a "black" market at all, and this trade is entirely legal under US law.

Collectors, of course, see their role differently, particularly the owners of relatively small "unimportant" collections. Coin and token collectors take pride in their possessions; they often go to great expense, invest much time, and spend large sums of money to build their collections. And they usually know a great deal about the history of what they have. Generally speaking they are happy to share their knowledge and the information they have gathered with others. It is a large part of the joy of collecting. Sometimes these people bring an extra layer of understanding to materials in their collections because of a personal connection with a location, or work and other life experience in fields related to the objects. Collectors, like most people, will generally return items if they discover that they were lost or stolen, and many even seek out the institutions or individuals they think are the proper owners. But decades of hostile encounters with academics and the often-repeated stories of such encounters in local coin clubs and numismatic meetings have made it increasingly difficult for collectors to feel comfortable about sharing artifacts and information with formal institutions or researchers.

Collectors are often afraid to cooperate with scholars for fear that their collections will be seized, or that they will be

prosecuted, even when there is no legal basis for seizure or prosecution.[1] Although seizure is unlikely to happen except in certain particularly flagrant circumstances, that does not mean that people have not felt threatened. As a result, many important pieces are never brought to the attention of researchers, and therefore, are not reported in either publications or public forums, or subsequently included in research.

## *What is the Law?*

It is not our intention to provide a guide to the legal status of archaeologically recovered numismatic material. Even a summary would be difficult since the protections offered to sites, especially cemeteries and other burial sites, vary from state to state. Every state has an Office of Historic Preservation that is responsible for overseeing the activities on archaeological sites and they can be consulted for the most recent regulations that apply in any specific location.

It is important to note that laws to protect antiquities in the United States differ significantly from those of other countries. In the United States the focus is on protecting the rights of private property owners, a philosophy that has its origins in the interests of early colonists who wanted to keep the government at a distance. Protection of sites, which does exist for most public and tribal lands, does not apply to almost any private property. While there are a few protections for graves on private land, in regard to most artifacts we are unlike the rest of the world, we let people keep what is found on private property, and they don't even have to report what they have found to any agency or government office.

The language of the law varies from country to country, but the idea that archaeological sites, and the materials within them, are part of a nation's heritage is shared by most countries around the world. However, in the United States, the regulations protecting sites, and determination of which recovered artifacts are a part of our national heritage, depend on who owns the land where the artifacts are found. Archaeological sites, and the materials recovered from within them, found on federally owned public land follow the trend in much of the world and belong to the government that holds it in trust for the public. This applies to National Parks, military bases, and land under the jurisdiction of the US Forest Service and the Bureau of Land Management.

In many places around the world the laws declare that all archaeological sites are part of the national heritage and should not belong to individuals. The language and details vary from country to country, but the concept that recovered artifacts are part of the nation's shared heritage is similar. There are many people, both archaeologists and collectors, who would like to see some version of this concept used to strengthen the laws that protect our shared heritage in the United States, but sadly it is not likely to happen soon. Popular American concepts of ownership, freedom, and privacy, especially privacy on private property, do not lend themselves to the kind of programs that have been in place in much of the rest of the world. And even more important in reducing the likelihood of such programs is the fact that they cost money, and legislators at the national, state, and local level are unlikely to provide the required money when so many urgent priorities are unmet.

Large numbers of coins have been recovered from some shipwrecks, but many of these wrecks have complex ownership questions, that must be resolved in a whole series of courts before the artifacts' ownership can be known. When the ownership questions are resolved, while a few of the coins are sometimes placed in museums, the great majority of the coins (along with ingots, jewelry, and other artifacts) are normally sold to collectors, and the collectors are clearly then the legal owners, whatever archaeologists may think of this.

There are some things that anyone who works with or even owns archaeologically recovered numismatic materials should know about the law. Also anyone who might encounter numismatic artifacts in the course of practicing a hobby or building a personal collection needs to know about the legal status of their activities and possessions. But it is the search for authenticity and confirmation of ownership that frequently leads to a very serious divide between avocational collectors and professional archaeologists. For example, a collector who finds coins from famous shipwrecks for sale on Internet auction sites or at a local coin show may wonder about the ethics of buying them. Or sometimes numismatic material just shows up when you aren't even looking, in places where people have been walking and hiking for years, as was the case with the recently recovered Saddle Ridge hoard of gold coins found in California.

What's a person to do with such finds? Sometimes the people who find numismatic materials in places that may be of interest to archaeologists seek out their guidance. For example, many people who are railroad enthusiasts enjoy walking along old railroad tracks and find artifacts that they believe are part of railroad history and therefore worth saving. That person might take such finds to a local history museum or nearby university with the intention of donating the material to an appropriate repository; they are trying to figure out where that repository might be, and what would be done with donated material. Sometimes people find objects of interest on their own property and, wanting to know more, take them to a nearby college. They may be trying to find out more about what they have, whether it is of monetary or historic value, or even if they have a right to keep it.

Even though the protections of US law do not usually apply to artifacts found on private property, many people, especially those with an interest in history or archaeology, want to donate artifacts to some form of permanent care and would like to see them on display in a museum. Others, who have no interest or even knowledge of the ownership issues, bring coins and tokens that have come into their possession to the "experts" for authentication, for identification, or just to see if they are real. Still others have coins and tokens that have been in the family, in collections of one kind or another, and they just want to know what they have. These are some of the main reasons why someone with a coin or token they think may have been connected to an archaeological site takes it to an expert. They want to know what it is, where it has been, and what it is worth, so they take it to the places where they believe the experts work.

## *Who is the Expert?*

It takes considerable time to learn enough about numismatics and archaeology to be an "expert." Often people who are considered experts in archaeology are professionally associated with an institution such as a university or museum. The most famous "archaeologist" in the world today is probably the fictional Indiana Jones—whose image is plastered all over sites

such as Petra in Jordan and whose sensational adventures are celebrated in movies and a theme ride at Disneyland.

But the only thing that Indiana Jones has in common with real archaeologists is a teaching position with a university and the fact that people walk into his office with artifacts that need to be authenticated. His archaeological technique of slashing, burning, crunching, and generally destroying sites as he goes makes real archaeologists laugh and weep at the same time. But the portrayal of a professor who works "in the field" when classes are not in session is typical of many academic archaeologists. The amount of time spent teaching or working in the field, either nearby or overseas, varies from school to school, but almost any archaeologist in academia has current or past field experience.

Recently a number of television shows have glorified treasure hunting and made contests out of who can find and dig up the most "valuable" materials (always measured in dollars) in the shortest time. Important sites have been declared open to giant free-for-alls of destruction by metal-detector contestants to see who can find the most valuable artifacts in the least amount of time. Since these contests are located on privately owned land there is little archaeologists can do but stand by in horror and watch as the "recovered" artifacts are taken to antique dealers and shop owners for "verification and evaluation." Someone in this situation needs some education, who is it? What constructive alternatives can professional archaeologists offer?

### Types of Archaeologists and Where They Can be Found

Academic archaeologists work at universities and colleges, public and private, and an increasing number are finding positions in community colleges. Usually people working in such positions have an area of expertise, often a place and time of which they have especially deep knowledge. Others have skills such as faunal or botanical analysis, dating techniques, or lithic or pottery analysis, although even these subjects often have a focus in time and place. They are normally members of several professional organizations and know other archaeologists in the area and their specialties.

Major traditional museums, such as the National Numismatic Collection at the Smithsonian Institution, the Money Museum of the American Numismatic Association in Colorado Springs, and local community and city museums are also places where specialists in numismatics can sometimes be found. Many larger museums employ archaeological specialists. Because the goal of museums is to hold, protect, explain, and display their collections, they are often the first place people think of when they want or need to have something identified. Also, working with the community is often one of the official responsibilities of museums, or a requirement for some sources of funding, even though museums are prohibited from providing appraisals to prevent conflict of interest.

Cultural Resource Management (CRM) work is the other major source of employment for archaeologists. Archaeologists are called in when the construction or alteration of buildings, roads, dams, new power lines, or similar work is planned to determine if any archaeological resources will be impacted. They provide a combination of a visual inspection (archaeological survey) of the location and historic research used to support environmental documents and reports. Archaeologists help companies negotiate plans to "mitigate," or reduce the damage that will be done when the project work takes place, and often engage in data recovery excavations to remove as much information as possible from the sites before they are destroyed. Cultural resource management is related to private and government projects, and some CRM archaeologists work for government agencies, such as land management agencies or local or state transportation departments, while others work for tribal authorities or in the private sector.

There are reasons why CRM archaeologists are not usually sought out by people who are trying to get information about artifacts as often as are those who work at colleges or in museums. Unlike schools and museums, CRM work is done by government bureaus or by for-profit companies whose work is in service to a client, rather than the public. CRM work is little known to the public, and even when it is being done by a government agency the visibility is usually low. Also, the offices of the organizations that run archaeological salvage operations are often in other cities, or even states, far from where the work is being done, and are not places where the curious can simply walk in.

Most CRM archaeologists are ethical (though of course there are some exceptions) and many have the same level of academic training as those who work in schools and museums. But in fact, in most cases involving work on private property, CRM archaeologists are obligated, at the end of their project, to hand the artifacts over to the owners of the land or their agents. Some owners donate the artifacts to a museum, but many do not, and in fact in much of the country there is no local museum willing and able to accept. The sad fact is that in the United States museums and universities do not have the resources to curate most artifacts recovered at archaeological sites, or found by members of the general public. This lack of resources sometimes even leads to the sale of material from museum collections, a not-uncommon phenomenon that feeds the attitudes of those who distrust formal repositories.

## *How about Some Collaboration?*

We must consider some of the reasons why negative encounters take place. Animosity from the archaeologist's perspective may come from the frustration of trying to perform scientific studies at archaeological sites that have been nearly destroyed by unauthorized or illegal digging. Even when the damage to sites is less severe, the removal of artifacts without regard to systematic techniques or associations with nearby artifacts can destroy the archaeological context by which a site can be interpreted. Even when artifacts were obtained legally from archaeological contexts, their presence on the market without any documentation or provenience information serves to fuel the debate.

The only reason why these confrontations usually do not take place in a courtroom is that there is little legal protection for archaeological and historic sites and their contents anywhere but on government-owned properties. Designation as an historic landmark provides some limited protection for some privately owned properties, but it can be very difficult to prove that artifacts were removed from such locations after the designation was effective. Unlike countries in other parts of the world where there are laws to protect archaeological sites and give specific direction to people with archaeological finds, in the United States there is little to guide a nonarchaeologist who

has found valuable artifacts, and little protection for sites that are on private property. Once an artifact from an archaeological site has been found or purchased by a nonarchaeologist, it can be problematic to figure out the appropriate steps to take to regain some of the information that might still be derived from the artifacts.

Unfortunately, many academics have become increasingly difficult to approach. Campuses are more isolated from communities, and between parking difficulties, limited office hours, and an unwelcoming attitude towards strangers walking around campus, it is more difficult than ever for nonstudents to talk to staff. Also, some staff have made themselves unapproachable. Failing to recognize the quality of self-education among people who never had the opportunity, or perhaps did not desire, to pursue a formal education is also a common mistake, leading to false assumptions about the information nonacademics may have.

Future technological developments may offer sophisticated solutions to the problem of artifacts from looted sites ending up on the market in the first place. The "Virtual Curation Library" located at Virginia Commonwealth University maintains a collection of 3D images of artifacts from different locations and posts them online for scholars to use (http://vcuarchaeology3d.wordpress.com/). The public can even subscribe to the service and receive a new image every day by email. Such programs serve to educate future scientists as well as informing the general public. There are many other imaginative ways of preserving and sharing information, and all archaeologists will need to be familiar with them.

Almost two decades ago the following passage offered suggestions about the future (Akin 1996:126).

> The notion that an individual, institution, organization, or museum must have physical possession of an object in order to study, protect, and appreciate it is becoming an anachronism. The variety of non-intrusive, yet highly accurate, methods of recording the physical characteristics of material culture is increasing rapidly. While images and information can never substitute for the real object, many of the stated goals of museums, academic institutions, and private collectors, to preserve, protect, and present to the public their collections, can be accomplished without actual physical possession.

Three-dimensional printers are in their infancy, but they are already being used to make replicas of artifacts for educational and security purposes. Of course displaying the collections is only one of the things that are done with museum holdings, but 3D printers will offer another new technology for making exhibits more accessible. There is every reason to believe that as-yet unimagined technologies will give us the ability to produce virtually undetectable copies of artifacts. Will collectors accept such copies so that originals can be kept in repositories (or vice versa)? What will the availability of copies do to the black-market outlets used by looters? Can we move the discussion of this entire topic away from blaming collectors for the evils of the black market into something more constructive?

It is also possible that by learning the methods, terminologies, and typologies of interested parties from other approaches and disciplines we can discover new things and achieve a new level of mutual respect about this class of material culture. The growing number of privately and publicly supported websites such as www.tokens.com will aid this process, which has already yielded preliminary results.

### Examples of Friendly Collaboration

Two years of archaeological testing and data recovery fieldwork designed to mitigate adverse effects of the proposed construction and rerouting of a highway commenced in Sandpoint, Idaho in 2006 with James Bard deeply involved from the beginning. Tracks of what had been the Northern Pacific Railway were included in the area. The Northern Pacific Railway began as the Northern Pacific Railroad (NPRR) and its tracks reached Sandpoint, Idaho in 1882. Sand Point was a stop on the route and a small town sprang up adjacent to the tracts. Understanding the complex history of the railroad in the area was important to the project.

Gary Weisz, an amateur archaeologist and railroad history buff reached out to the project's archaeologists through the local Bonner County Historical Society and the Idaho Transportation District's public relations project office. Gary recently retired from years of employment as a lineman for the railroad. He offered to assist with the archaeological project and to identify any railroad related artifacts that might be uncovered. This was especially helpful as the investigation included several sites that were eligible for the National Register of Historic Places, historical archaeological sites that were soon to be covered by the new alignment of US Highway 95. The value of having the help of a former railroad worker and ***avocational archaeologist*** to bring detail and depth to the project was recognized instantly.

Weisz shared his years of research on the history of the NPRR, its construction camps, the Chinese laborers who passed through Sandpoint along with the construction "front", and most importantly for this book, he loaned James Bard the Asian coins he had surface-collected from several NPRR Chinese labor camps in northern Idaho and western Montana. Collaboration between Weisz and professional archaeologists has been mutually beneficial and the products of that collaboration include advances in numismatic archaeology (Akin, Bard, and Weisz 2015) and a better understanding of the history of the overseas Chinese in western North America and their role in the successful completion of the transcontinental railroads.

It is hard to know if the ease of this collaboration was due to the open attitude of everyone involved, or the rural, small-town nature of the project area. However, such successful collaborations should be studied in order to increase their number. A scholar's refusal to suggest a market value for an artifact, even an utterly valueless one, is often taken as confirmation that it is rare and valuable (Akin 1996). In the case of valueless coins found by amateurs, declining to examine or identify the coins would likely lead to more site destruction, as persisting notions that the coins are valuable could lead to attempts to recover more. This approach clearly does not apply to material with high market values. Such a situation points out a basic paradox faced by anyone trying to reconstruct the past from material culture remains. We have to decide what strategies will result in the least *overall* loss of data. We have to balance the potential loss of data from looting that might be the result of cooperation with looters, dealers, or collectors, against the loss of data that will result from refusing to examine materials that are currently in their hands. At the same time, we have a responsibility to provide guidance that will preclude data loss in the future.

The basic problem is that removing an object from its original context without proper documentation destroys much of the evidence that gives the object meaning to us. The problem with unprovenienced material is that we lose information needed to interpret the past. We try to prevent this loss of information by refusing to cooperate with anyone involved with the material, in hopes that strong disapproval will stem the tide of looting. The paradox is that this lack of cooperation simultaneously prevents investigators from retrieving other information, information that is not dependent on provenience or contextual associations. In order to prevent loss of information, we must sometimes lose information.

The loss of information due to the looting of sites is a very visible problem. The loss of data because the material in private collections is not recorded or analyzed by people involved in academic research is not so visible, or even understood. It is important to recognize the scientific value, not to mention the sheer mass, of the materials in private collections, and come to terms with the fact that if we are to get the data we must develop some methods of working with the people who "own" it. As we strive to understand the practices, customs and even the ideology of past societies, we must not lose sight of the practices, customs, and laws of our own society today. It is a fact that private ownership of many artifacts, including most numismatic artifacts, is legal and customary in our own society. We must be vigilant in using the law to protect sites and artifacts, but our society does not entrust the making of laws to archaeologists, but to legislators. If we act as though some law has been passed forbidding collecting, we will so alienate ourselves from social reality and from our own fellow citizens as to lose the ability to work with them in important practical ways.

Instead, as the trained professionals in these situations, we need to develop methods of working with material with a less than perfect pedigree, and remember that people do learn from their mistakes. The development of online repositories of information concerning North American coins and tokens might show us a way to collect and maintain important information about numismatic artifacts. It should be possible to develop crowd-sourced websites and blogs that would allow anyone to submit material for online curation. Even instructions for printing 3D models of coins can be posted to allow any teacher to reproduce numismatic materials for use in the classroom. There will be more ways to connect to the public than we can even imagine now unless we take the imagined high moral ground and continue to spin our wheels in the same old ruts.

## Note

1. See Tomas F. King's discussion of the complications of this common misconception in his "Statement on the Legal Status of Archaeological Material on Non-Federal, Non-Indian Tribal Land in the United States" at http///crmplus.blogspot.com/.

# GLOSSARY

**Accession:** A transaction between a museum or other repository and a source in which one or more objects are acquired at one time from a contributing source.

**Accession date (museology):** The date when a museum or other institution accepts items and adds them to their holdings.

**Accession date (numismatics):** The date, usually expressed as the year, when a monarch took the throne. Some coins are dated with the accession date plus the regnal year, giving the year the coin was minted.

**Achum:** Believed to be a Chumash word for shell-bead money.

**Alloy:** Any mixture of two or more metals usually used to refer to man-made alloys made to increase the strength, workability, or economy of the final product. Some alloys, such as electrum, occur naturally.

**Artifact:** An object, or piece of an object that was made in the past and is more or less portable, such as ceramic dishes, stone tools, and coins and tokens.

**Assay:** The testing of the purity of metals using chemical and physical tests.

**Assay mark:** A physical mark on a coin that indicates who did the testing to insure the purity of the piece.

**Assemblage (archaeological):** A group of coins and/or tokens recovered from a single location and grouped together for analysis because they were deposited at that location for the same reason, if not necessarily at the same time.

**Authentication (numismatic):** Certification that a coin or token is genuine and as described by the owners. A document stating that the piece was found, or came from a particular location (such as a shipwreck) and the name of the person or company who verified the claim accompany the object. Authentications vary widely in quality.

**Authority (numismatic):** The administrative power or right of a government, or other political entity, to produce circulating currency. Authority is normally only as valid as the users' willingness to recognize the right of the government to control the economy and produce money.

**Avocational archaeologist:** Someone who works with, or as, an archaeologist even though they don't have a formal education in the field. They usually work without pay as volunteers who help with field work, assist with the establishment and maintenance of campsites, or work in labs and museums.

**Barter:** The direct exchange of commodities for each other without the use of money.

**Behavioral systems:** In the context of this book, the term behavioral system describes a set of related human activities incorporating numismatic material culture. Human activities and behaviors move artifacts in patterned ways that are reflected in the archaeological record. Profiles of the expected characteristics of an assemblage of coins deposited as a result of the same type of behavior can be developed and used in archaeological analysis. Understanding a behavioral system and its impact on artifacts can help us interpret aspects of the use of money including non-monetary uses of money.

**Billon:** An alloy of silver and an equal or greater amount of another metal of lesser value. A billion coin is made to look like a silver coin, but is worth less.

**Bit (numismatic):** The English and Danish name for a Spanish colonial one-*real* coin. Also a term used to indicate one-eighth of the value of a peso or dollar, as in, "shave and a haircut—two bits" meaning a cost of 25 cents.

**Brass:** An alloy of copper and zinc, in varying proportions, often including other metals.

**Bronze:** An alloy of copper and tin, often including other metals.

**Bronze disease:** Any one of several kinds of oxidation of bronze coins that produces corrosive damage that is difficult to stop and can spread from coin to coin.

**Bullion pieces:** Coins that "circulate" based on the market value of their metallic content rather than the value marked on them. These coins are not intended for daily use in circulation.

**Cash:** While the word has many meanings, as a coin name it was originally used in several languages of southern India for a small copper coin. Europeans applied the word to Chinese *wen* and other similar coins, and it is frequently found in numismatic references. The word "cash" was never actually used by the Chinese themselves, although it appears in the English legends on some Chinese coins produced under the influence of European officials. We use the Chinese word *wen* for this denomination.

**Cast (numismatic):** A method of producing coins by pouring molten metal into molds used in China and several other countries before the advent of machine striking. Casting was used instead of the hammer and die method of striking coins favored elsewhere. The last official cast Chinese coins were produced in 1916.

**Cent:** A hundredth of a dollar, or ten mils. Cent is the proper numismatic and legal term for the coin that many North Americans refer to as a penny. (The cent was originally worth one halfpenny, not one penny.)

**Chopmark:** A small mark made by East Asian traders or bankers with a punch to indicate that a coin has been tested for purity and weight.

**Circulation:** The transmission or passage of money (notes and coins) from place to place or person to person in the normal course of commerce.

**Circulating currency:** Any currency that is produced by a governing authority and is accepted and used by the population in general.

**Civil War token:** Any one of a large number of privately made tokens about the size of a small cent that circulated during the US Civil War as a kind of emergency money.

**Cob:** Crude gold or silver coins produced by the Spanish colonial mints in the "New World" from the sixteenth to the eighteenth century.

**Coin sword:** A group of *wen* strung together in the shape of a sword, often with a steel rod added to the inside the "blade" for strength. Coin swords have various talismanic and religious uses.

**Commodity money:** Items of a locally assigned standard value that were used in place of coinage in places lacking sufficient coins. These items, such as dried codfish in the Canadian Maritime Provinces, beaver pelts in French Canada and some nearby places, or tobacco in Virginia, were used when coinage was not available. Notes good for so much tobacco or cotton or dried codfish are a form of paper money.


**Figure G.1.** Conder token: A private halfpenny from Petersfield, England, 1793.

**Conder token:** A private token from late eighteenth-century Britain, generally intended for local circulation. So-called because they were cataloged by James Conder in 1798. Many such tokens were exported to Canada and the United States, where they saw some circulation.

**Contemporary:** Two things that happened at about the same time. In reference to coins, it may be said that Barber dimes and Indian Head cents were contemporary because they circulated together for many years in the late nineteenth and early twentieth centuries in the United States.

**Contract archaeologist:** Archaeologists who work with agencies, companies, or contractors who are undertaking projects that may endanger or destroy archaeological sites. Sometimes referred to as CRM (cultural resources management) archaeologists, their role is to obtain as much information as possible from a site that is going to be destroyed, usually by development.

**Counterfeit:** A fake intended to pass as currency in circulation.

**Counterstamp:** A design applied to coins to change their value or the places where they will be accepted in the future. Merchants and others may counterstamp coins for various reasons, including advertising.


**Figure G.2.** Counterstamp: Devins & Bolton, merchants of Montreal, were the most prolific counterstampers in Canada during the 1860s.

**Cowries:** Small, common seashells that were used in several parts of the world as an early form of money. Copies of cowries cast out of bronze were among the oldest forms of money minted in China, and cowries were recovered from seventeenth-century shipping warehouses in Amsterdam.


**Figure G.3.** ***Cud***: This 1802 US cent has a cud at 11:00 on the reverse.

**Cud:** When a portion breaks off a die, the coin will have a protrusion where the metal of the flan extrudes into the space where the mission portion of the die used to be. This protrusion is a cud. When coins with cuds are minted, the die is taken out of use, so this is the last stage of the use of the die.

**Curation (archaeological):** Caring for artifacts, ecofacts, and other archaeological material as well as documents, photographs, and digitized data in such ways that they don't deteriorate and are more or less available for future study.

**Data:** Any type of information that can be systematically obtained and organized. Archaeological sites and artifacts contain data, archaeologists record and work with data.

**Die (numismatic):** Hardened metal used to strike coins. Two dies, each one with the design of one side of the coin or token carved into its surface in reverse, are need to produce a coin. A blank piece of metal is placed between the two dies and they are pressed

together or struck with a heavy hammer to produce the designs on the surface.

**Dollar:** A silver coin weighing approximately an ounce. The name derives from the German *thaler* or *taler,* short for *Joachimsthaler*, after the *Joachimsthal* or Joachim's Dale in Bohemia, where the first large mintages of European silver coins of this size began during the late 1400s. The dollar became the international standard for silver coinage during the 1500s, a position solidified by its adoption as the standard form in which American silver was exported by the Spanish to Europe and Asia. Other names for silver coins of this size include crown, *daalder, talero, peso, piastre, duro,* etc.

***Dong*:** The lowest-denomination coin in the traditional Vietnamese monetary system. *Dong* were cast from zinc or brass, and have the same general size and appearance as Chinese *wen*.

**Figure G.4.** *Dong*: This zinc *dong* of the Tu Duc reign (1848–83) was recovered at Deadwood Chinatown in South Dakota in 2001. Photograph provided by Deadwood Historic Preservation and the City of Deadwood Chinatown Archaeological Collection.

**Electrum:** A naturally occurring alloy of gold and silver used in the earliest coins produced in Asia Minor.

**Elongated coins:** Low value coins that are pressed between two rollers, one with a die surface, to make inexpensive souvenirs; these are popular with collectors and tourists.

**Emergency money:** Any locally-circulated currency produced because the regular circulating money is unavailable for any reason. The need for necessity money can be sparked by anything from a siege to a severe economic depression.

**Emergency money/currency:** A term applied to any object used as money at times, and in places where regular money was not available due to isolated locations, wars, or even the lack of raw materials with which to make circulating currency.

**Error (numismatic):** Any numismatic item that exhibits damage that occurred when it was being manufactured. For one example, see "cud."

**Face value:** The value stated on a coin. This value does not always accurately reflect the value of the coin in commercial exchange.

**Fantasy (numismatic):** Any numismatic item with the general appearance of being a coin or token that was not issued for actual use, but intended to amuse or deceive. Fantasies are sometimes used to make satirical statements, but are more often produced for profit. The so-called "brothel tokens" of the last half-century are fantasies.

**Feature (archaeological):** A nonportable part of a site that has some recognizable meaning. Sometimes it is an architectural feature such as a hearth, a well, or a foundation. Sometimes it is a noticeable difference from one area to another in soil color in a suggestive shape, such as rectangular patch for a room, or circle for a posthole. There may be no way to know what it is by looking at it, so tests of the material in it are made.

**Field (archaeology):** A term used to refer to the location of a site, as in "she's in the field," meaning she is at the archaeological site.

**Field (numismatic):** The flat background of a coin, from which characters, figures and designs rise. Examination of the texture of the field is the first step in distinguishing a cast coin from a struck coin.

**Fineness:** The proportion of precious metal in any object, expressed in parts per thousand. For example; sterling silver has a fineness of .925 or 925 parts out of a thousand pure silver. A US $20 gold piece is said to be .900 fine or of 90 percent pure gold. Small amounts of copper or other base metals are added to the precious metal to make the object more durable.

**Flan:** The piece of metal from which a coin is made by striking. A flan begins as a blank, but is usually processed to some degree to become the flan from which a coin is struck.

**Forgery (see counterfeit):** A forgery is a piece made with the intention of deceiving collectors.

**Formation processes (archaeology):** The natural and human processes and activities that impact an artifact any time from the time it is produced, through all of its use-life and after it enters the archaeological record, until it is recovered by the archaeologist.

**Frozen date:** A date, usually a first year of production date, that is used on a coin but is not changed for later productions, sometimes for decades. Frozen dates look like normal year dates and are usually found where the production date is usually located on the coin. There are several reasons why a coin might be issued with the same date on it year after year, but most are related to the strength or weakness of the issuing authority.

**Fungible:** Fungibility is a basic property of money, that the pieces may be substituted for any other parts of the same monetary system having equal value. Two quarters are the same amount of money as a half dollar, for example.

**Gold standard:** When the circulating currency produced by a government, of other metals or of paper, is legally tied to a specific amount/weight of gold. Very common in antiquity and all around the world until the twentieth century when government-backed credit replaced it.

**Grade (numismatic):** The condition of a coin or token as expressed by a formal scale. Used (among other factors) in determining market value. The grade is basically determined by the amount of wear, and this may sometimes be a help in archaeological analysis.

**Hacienda token (*ficha*):** Tokens used in Latin America primarily during the eighteenth and nineteenth centuries to pay workers on remote plantations (haciendas). Usually they had to be used on the estate where workers earned them. The use of hacienda tokens and other similar forms in other places in the colonial world was a way to establish peonage or debt slavery, though sometimes the only intention was to supply small change where it was lacking.

**Hammered coins:** Coins or tokens that were made by striking dies directly with a hammer onto the flan. Hammered coins preceded the use of machine production.

**Hoard:** A group of coins (occasionally tokens) that was buried or hidden together. Not to be confused with an assemblage which is any group of coins that is recovered from a single location as a result of the same activities.

**Iconography:** The study of symbols and their meanings, especially symbols that appear on, or are part of an artifact. In the numismatic context, iconography is the interpretation of the symbols (icons), themes and subject matter that are symbolically depicted on coins and tokens, in order to advance the understanding of the cultural context in which coins and tokens were produced.

**Incuse:** Incuse devices or lettering on a coin are sunken in to the field of the coin. Most coins use relief (bas-relief) in which the devices and designs rise above the field of the coin. The choice to use either incuse or bas-relief designs is often related to the technology of the coin's production.

**In situ (archaeology):** Refers to artifacts that have been revealed by archaeological methods but have not been moved from original place of deposition. Artifacts in situ enable methods of interpretation that cannot be made once the artifact has been removed. Artifacts discovered out of context cannot provide an accurate picture of the associated artifacts and features and the culture they represent.

**Ingot:** A bar or piece of metal with a set or regular size, often with the information about the weight and fineness of the metal and information regarding production stamped into the metal. Ingots are a convenient way to move raw materials between the refinery and the mint. Many investors keep ingots as a way to keep gold and silver in a form easy to store and exchange.

**Intrinsic value:** The approximate value of the metal of which a coin is made. The value is culturally determined.

**Isolate (archaeology):** An artifact found without any meaningful context, or separated from the rest of a site or group of similar artifacts.

**Issue/re-issue:** A coin is said to be issued when a currency-producing authority approves and releases it for use. When the coin is released again, at a later time, it is re-issued.

**Jeton or jetton:** A type of token originally used to help calculated the value of money, originally during the period when Roman numerals were being replaced by Arabic numerals in Europe. The tokens were used as "counters" in a system not unlike beads in an abacus. Although originally produced for calculating, and later used as gambling tokens, jetons were also used as an all-purpose token with a value assigned by the users, and circulated during coin shortages.

**Law of superposition:** The principle that sedimentary layers are deposited in a time sequence, with the oldest on the bottom and the youngest on the top. In archaeology it takes careful interpretation to correctly identify chronological sequences based on the order of the layers due to disturbances in the soil among other formation processes impacting a site.

**Love token:** A coin that has had one or both sides sanded to a smooth surface that was then engraved with initials or symbols of affection. Love tokens were popular in the late nineteenth century, often using silver dimes, as an inexpensive, easy to produce gift.

**Material culture:** (archaeology) All of the objects, "things," or "stuff" produced by a society or given culture. All material culture is a reflection of the underlying beliefs, technology, arts, and activities of any group of people, and is important to an accurate understanding of the people who produced it.

**Medal:** Usually a round metallic disk, with the general appearance of a coin or token but not made to be used as money. Medals are often made to commemorate a special event, honor a hero or saint, or to give as a special honor, as an Olympic Gold Medal.

***Mil*:** A thousandth of a dollar, one-tenth of a cent. Note that in Spanish, *mil* means "thousand," and *mil* pesos is a thousand pesos rather than one-thousandth of a peso.

**Milagros:** Literally "miracles," these small metallic objects, often in the shape of a body part or an animal, but occasionally in the form of a token, are left at an altar as an offering to accompany a prayer for healing the body part or sick animal. Popular in some Latin American cultures.

**Mint:** A factory for the production of coins, whether by striking or casting. The word has also been applied to a place where shell-bead money is made.

**Mint act of 1792:** The law that established that a national mint would produce coins for the United States using the decimal system.

**Mint mark:** A word, initial, or mark placed on a coin to indicate the mint which produced it. When the name is given in full, it may be referred to as a mint word or mint name. The normal mintmark on a Chinese coin is a single syllable, rendered either as a Chinese character or as its transliteration into Manchu. Mexican mint-marks are abbreviations of the name of the mint city. In the United States, mint marks are small single letters.


**Figure G.5.** Mintmark: The small letter D is the mintmark of the Denver mint.

**Mint right:** The authorization to produce coinage on behalf of a sovereign, a government, or other governing entity.

***Mon*:** A Japanese coin, the lowest denomination in their traditional currency system, similar in size and appearance to the Chinese *wen*. The Meiji currency reforms of the 1870s demonetized the *mon*, and many of the coins were shipped to China.

***Nian hao*:** (see reign name).

**Noncurrency:** The use of coins as jewelry, good-luck talismans, and decorations, among other things.

**Obverse:** The "head" side of a coin. In early European coinage the obverse often had a portrait of the ruling monarch. In Chinese numismatics, the side bearing the reign name.

**Overseas Chinese:** A term used to describe Han Chinese living abroad, whether temporary or permanent residents of their host countries. During the nineteenth and early twentieth centuries over 90 percent of Overseas Chinese in North America were Cantonese from Guangdong Province. Social conditions having changed, the term is rarely used today.

**Overstrike:** The superimposing of one coin design on another. Both in the ancient world and in more recent times, old or worn coins were overstruck with new designs.

**Pattern (numismatic):** A pattern coin is one created as an example and not meant for circulation. Pattern coins were made for many purposes including as sample coins for government officials and to test various designs for suitability for mass coining.

**Pinyin:** The official Romanized orthography of the People's Republic of China, used to represent the sounds of the official Putonghua (Mandarin) language in communication with foreigners, and used to some degree in the lower grades in elementary schools. Pinyin has been adopted by most of the world for transliterating Putonghua Chinese, with the notable exception of Taiwan, where it is not used at this time.

**Pothunters (archaeology):** A pejorative term for people who dig or pick up artifacts for their private collections or to sell or trade, or otherwise use for their own purposes. Some archaeologists put virtually all artifact collectors in this category, others reserve the term for those who are more or less wantonly destructive. A pothunter doesn't necessarily hunt only pots: he or she can hunt for any kind of artifact, or for human remains and other items from the past (King 2005: 156).

**Planchet:** A prepared disc-shaped metal blank onto which the devices of a coin image are struck or pressed. The metal disc is called a blank until it passes through minting machinery which causes the rim to be raised. Once it has a rim, it is a planchet. An alternate term is flan.

**Primary use/secondary use (archaeology):** Artifacts have a chronological use-life and these terms refer to the original use of the object, usually the function for which it was produced, and a later use for which the artifact was repurposed. A given artifact may have several secondary uses, described as such rather than as tertiary, quaternary, etc.

**Private issue (numismatic):** A private issue is coinage not authorized or minted by a government. Often refers to privately-minted gold coins having a substantial bullion-value, such as the Brasher doubloons or pieces struck during the California Gold Rush period. A private issue may also refer to privately minted tokens or store cards.

**Profile (archaeological use):** Profiles are cross-section views of an excavation units' walls. Profile drawings or cross section drawings are representations of the walls of an excavation unit as though you are standing directly in front of them. Excavation unit sidewall profiles help establish chronology in a site.

**Provenance/Provenience:** Provenance and Provenience are essentially the same word, diverging in spelling and pronunciation but used in both the United States and Great Britain to mean the source of something, the place where it was found, or the place where it was made. In archaeology, it has normally meant the precise spot where something was recovered. In recent years, some have attempted to give different meanings to the two spellings, but this has not caught on. Some collectors, dealers, and numismatists use the words to refer to the chain of ownership of a coin, from its minting or excavation to the present day.

**Recoining:** This occurs when a government calls in (removes from circulation) certain coin denominations and uses the metal to produce replacement coins. Recoining is normally association with major monetary reforms, such as decimalization, or with a change of government.

**Reeded edge:** The serrated edge of a coin, such as the current US quarters. Reeded edges were originally added to coins to prevent counterfeiting and shaving off slivers of precious metal (silver or gold) as was often done to Spanish colonial cobs. Reeded edges are usually not added to low value coins such as copper or zinc cents because of the added costs. Lettered edges may or may not be reeded, and there are many forms of reeding.

**Figure G.6.** Reeded edge displayed between a smooth edge and a lettered edge.

**Reign name:** Reign names (*nian hao* in Chinese) were the basis for dating in the past, when monarchies were the basic form of government as well as the authority for the production of coins. In the case of Chinese and Vietnamese coins each reign was given a two-syllable name, chosen for political and religious reasons, upon the accession of the emperor. Chinese and Vietnamese coins may be dated to the correct reign by reading this name, which appears as the top and bottom characters on the obverse of each coin.

**Reverse:** The "tail" side, or "back side" of a coin.

**Reverse die:** All US coins are struck by a pair of dies. A die is a broad, short steel rod with a face the same size as the coins being struck. This steel rod contains the design for one side of the coin. Two dies are needed to strike coins. One will have the obverse (front of the coin) design, and the other will have the reverse (back of the coin) design.

**Shell-bead money:** In North America, any one of a number of pre-contact and early post-contact forms of money that are made from shells. Sometimes they are strung or woven together. Certain shells were also used as money in parts of Asia, Africa, and Oceania.

**Spanish dollar:** As used in the China Trade, a "dollar" (*duro*, *peso*, or *ocho reales* in Spanish) produced in the Americas under Spanish rule. The preferred coins came from Mexican mints, and undamaged dollars of Carlos III (1760–1788) and Carlos IV (1788–1808) called Carolus Dollars, after the Latin form of the king's name, brought a premium.

**Stock reverse die:** A standard die for one side of a token with commonly used features such as common denominations (5¢, $1, etc.) or standard designs such as federal eagles. When making trade tokens, often the reverse die was a "stock" die to keep the price of production down.

**Store card:** A variety of token that includes detailed information about a business on at least one side, a metallic rough equivalent of today's business cards. Civil War store cards, for example, differed from patriotic tokens in that one or both sides of the token displayed the name or location of the issuer—usually a privately owned business. If an issuer could afford to do so, it would have two custom dies made, with both advertising the business. Often as not, only one side of the token displayed the business information, with a stock die used for the other side.

**Struck:** Struck coins are produced by placing a piece of metal between two dies and exerting pressure to force the dies together. Originally, the top die was struck by a hammer, hence the term.

**Sycee:** Chinese refined silver. This English name refers to cast ingots of silver in various standard weights, used for large-scale and long-distance trade in China. The shapes of the ingots were reminiscent of boats or shoes, and sometimes of drums, loaves, axe-heads, and even butterflies.

***Tael*:** A Chinese weight, varying according to locality and the material being weighed between approximately 35 and 38 grams. The most common weights of *sycee* silver ingots were 1, 5, 10 and 50 *taels*.

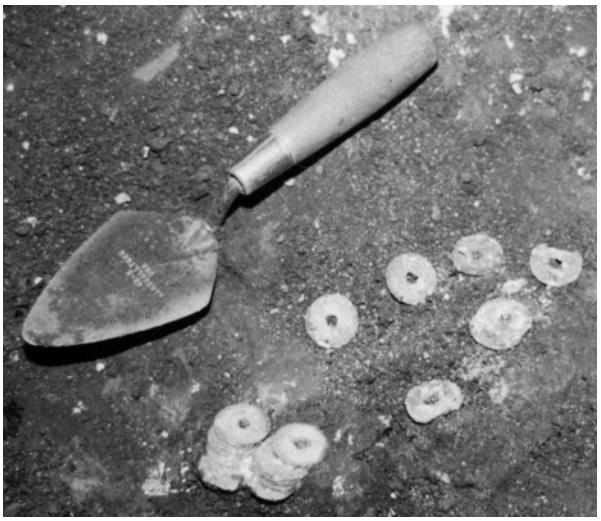

**Figure G.7.** Talisman: Groups of Chinese coins tied together with red thread, like this example being excavated, served as talismans. Photograph provided by Deadwood Historic Preservation and the City of Deadwood Chinatown Archaeological Collection.

**Talisman:** Any small object believed to have some power to connect the owner with supernatural forces or to control luck.

***Thaler*/*taler*:** The predecessor of the dollar and other related coins. A silver European coin denomination that was used for almost 400 years. Its name lives on in various currencies as the dollar or tolar. "*Thaler*" is an abbreviation of "Joachimsthaler", which was a coin from Joachimsthal (Jáchymov) in Bohemia where it was first minted in 1518. Coins of similar size had been minted from Bohemian silver since the 1470s. *Thal* or *tal* means "dale" or valley.

**Token:** Tokens are coin-like, quasi-monetary objects designed to resemble coins, but were not issued by a government mint. Certain classes of tokens were de-facto monetized during times when legal tender coins were in short supply. Non-monetary tokens include good luck pieces or advertising store cards manufactured to resemble coins.

**Use-life:** Term used to refer to an artifact's various uses from the time it was produced as an artifact of material culture until the time it was no longer used for any purpose and entered the archaeological record as used-up, lost, or otherwise deposited in the place where archaeologists recovered it.

**Vecturist:** A person who collects and studies transportation tokens as a hobby.

**Votive offering:** In the context of this book, a coin or token placed at a shrine or tossed into a fountain, well, or pond to express a religious vow, wish, or desire. This category may also include coins placed under or inside the walls of a building, under masts, or in coin-trees, etc.

***Wen*:** The lowest-denomination Chinese coin. During the middle and late 1800s this was the most common term for this denomination in China. Many of the one-cent coins struck between 1900 and 1928 express the denomination in Chinese as "ten *wen*." We use *wen* to describe this denomination, instead of *qian* which is a more general term for coins, or the English word "cash" that was never used by the Chinese.

**Figure G.8.** *Wen*: This brass *wen* of the Kang Xi reign (1662–1722) was recovered in 2001 at the Deadwood Chinatown in South Dakota. Photograph provided by Deadwood Historic Preservation and the City of Deadwood Chinatown Archaeological Collection.

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# ABOUT THE AUTHORS

**Marjorie H. Akin** has spent most of her life in California where she completed her education (PhD, University of California, Riverside, 1996), married, and raised four children. Her area of specialization within the field of historic archaeology is numismatics, and included among her publications are contributions to Roberta Greenwood's *Down by the Station: Los Angeles Chinatown 1890–1933*, Julia Costello's *The Luck of Third Street*, and many articles and reports about Asian coins recovered in North America. Her publications in other fields include the seminal essay "Passionate Possession: The Formation of Private Collections" (Smithsonian 1992), which examined the world of collectors and the often-fractious relationship between archaeologists and collectors. She has been active in the Riverside "Save Our Chinatown Committee" to protect the archaeological remains of Riverside's Chinatown from development (see www.saveourchinatown.org).

**James C. Bard** (PhD, University of California, Berkeley, 1979) is Principal of Ancient Artifact LLC, an Oregon business. He has thirty-nine years professional experience in California, Nevada, Idaho, Oregon, Washington, and other states. He has extensive experience conducting cultural resources investigations for energy generation, transmission, and distribution projects. Dr. Bard has designed and managed cultural resources investigation programs for federal, state, and municipal agencies, private industry, and the military and scientific community. He has broad technical and geographical background in all aspects of cultural resource assessment and regulatory compliance, program management, technical analysis, research design, Section 106 compliance, and tribal consultation. A lifetime coin collector with experience recovering coins from archaeological contexts, his passion is to foster increased cooperation and understanding among the professional numismatists and archaeologists and amateur archaeologists and coin collectors.

**Kevin Akin,** a retired steam engineer, has provided physical labor for Margie Akin's archaeological projects for forty-one years. He is a longtime collector of coins and tokens, an active member of several numismatic organizations, and has designed medals for coin clubs and community organizations.