

Accounting Historians Journal

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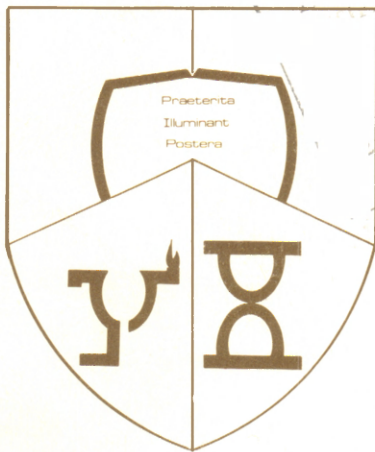
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The Accounting Historians Journal

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Spring 1977
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Research on the Evolution of
Accounting Thought and
Accounting Practice
Succeeding *The Accounting Historian*

THE ACCOUNTING HISTORIANS JOURNAL

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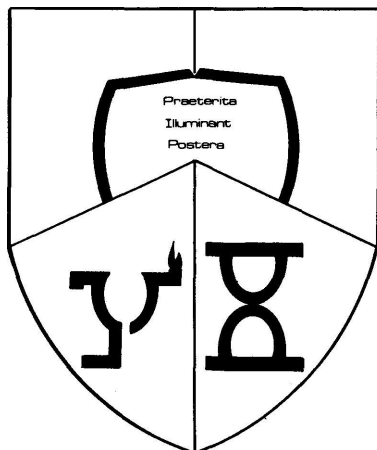
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Objectives

The Accounting Historians Journal is a refereed scholarly journal published semiannually (Spring and Fall) by The Academy of Accounting Historians. It is the successor to the quarterly publication *The Accounting Historian* and is numbered as a continuation to maintain the sequence of that series which commenced in January, 1974. *The Accounting Historians Journal* does not assume responsibility for statements of fact or opinion made by its contributors.

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THE ACCOUNTING HISTORIANS JOURNAL

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Volume 4, Number 1

Spring 1977

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EDITORS PROLOGUE

Accounting History, which is the study of the changes involving accountants and their environment, has gained an increasing amount of favorable attention in recent years.

The initiation of this journal, to succeed our quarterly tabloid newsheet *The Accounting Historian*, which appeared in 1974, represents a commitment to continue research into the History of Accounting for the purpose of ascertaining its relevant role in resolving issues in our contemporary environment. In order to insure continuity of reference to past research, this volume has been numbered as Volume 4. Volumes one through three were in the name of *The Accounting Historian*.

This first issue contains many of the papers from the Second World Congress of Accounting Historians. As such it contains a distinctive European and Asian view of Accounting History, a view which reflects cultural influences on accounting which are of considerable interest to students of history.

The editors acknowledge the heavy burden of responsibility that accompanies the undertaking of publishing a new scholarly journal. We have the courage to attempt this assignment because we have the support of the membership of The Academy of Accounting Historians. Their assistance has been given in full measure and we wish to thank A. R. Roberts, the officers and trustees of The Academy, as well as the Editorial Board and contributors to this first number.

Gary John Previts
Williard E. Stone

SPECIAL PREFACE

Second World Congress of Accounting Historians Banquet Address by

M. ERNST STEVELINCK
August 21, 1976*

The first feeling I would wish to express is a feeling of gratitude for the work which you have accomplished. Prior to and after the First International Symposium of Accounting Historians, in my capacity as President of The Belgium National Committee, I tried to promote the creation of a similar committee in each country. Indeed many countries have such a committee. However, in the United States you have by far outdone all other countries as to the extent of your achievement. You not only carry the torch which lit up the Bibliotheque Royale Albert in 1970 where the first convention of Accounting Historians was held and to which experts from the four corners of the world came, but you have also fixed it on a solid basis and have helped put together all the elements needed to foster future research in the History of Accounting which the seekers of the world are trying to compile.

I wish to say a word to express my admiration for the Accounting Historian Publication, the re-editing of the old accounting treaties, the organization of this Second World Symposium and your efforts towards finding the seat for the next Congress in four to five years.

It is with the greatest pleasure that I recognize some of my colleagues and friends who were present at the First Congress. However, it gives me even more pleasure to be meeting with distinguished professors, some of whom had been in touch with me by correspondence. Together, I believe we can further this relatively new science which is called Accounting History. Must we still find a spot for the history in the teaching of accounting? If I were only talking to the American historians, my address would be unnecessary, since the university professors present in this room have long

*Originally delivered in French. M. Stevelinck, as Secretary-General, *Comité International des Historiens de la Comptabilité*, was in large part responsible for arranging the First World Congress of Accounting Historians in Brussels, October, 1970.

since recognized the need for the teaching of accounting history. But, we must not forget that this is an international symposium and if I only mention Europe, which I know so much better, I can say that except for Italy which has also recognized the importance of historic research, a lot remains to be achieved in this field.

The study of a discipline on the historic level does not represent for those adept in an exact science a simple fantasy. On the contrary it is absolutely necessary for the complete understanding of that science.

It goes without saying that at a time when the sciences are expanding more and more, as they get enriched by the multitude of precious discoveries, the need is felt more than ever to study their history and to follow the various phases presented and the steps and progress of the human mind.

The story of accounting history is being read at all times. The active and rich study about unknown procedures has reappeared slowly and these procedures have taken their real place in the record of the accounting world. One cannot readily conceive of a painter or sculptor who would not have studied the history of art, or of a composer who would not have a knowledge of the history of music. This is an intergral part of their studies and is included in their curricula. Such is not the case with accounting. Often you are taught today's techniques without even taking a look into what was done in earlier centuries. Yet the study of the history of a science makes you develop a larger interest and a better understanding of it. While many sciences have their history, that of accounting remains to be written. It is strange that the accountant follows the guidelines without the desire to give credit or honor to those who developed them. Aside from the moral factor, he would feel real satisfaction in obtaining clarification of the terms in use and understanding the logic behind the procedures which brought forth the actual science.

I have been asked several times why I started the study of Accounting history. It was for personal reasons and without further motivation. Yet since an answer was due to the question, I found four reasons: a scientific one, a cultural one, a utilitarian one and a recreational one. In fact the four reasons are intertwined.

The Scientific Reason: We have known accounting historians of various disciplines and their findings were so influenced. The statisticians, the librarians, the economists, the politicians, the specialist of cost accounting, the bankers, the capitalist, the tax accountants, the professors and the professional accountants all are

looking at the same subject but with different views. Each selected a document or a series of documents and examined them with his personal affinity. The interest resides mostly in the synthesis of all the researches. One must also be able to limit oneself. To write the history of all countries from the beginning of time until the present would be a work too huge for one man and the result of such an undertaking could only be a summary without value.

One can leave to the Egyptians the art to decipher the paper and refer to their translations, although we have known accounting historians who were not afraid to study paleography in order to be able to look at the original document.

As we said in 1958 while we were working at the Accounting Convention at the International Worlds Fair in Brussels, "the future candidate in history must be armed with the following knowledge":

- history of business evolution
- evolution of numeration and the instruments of computing
- evolution of writing
- etymology of the terminology used in accounting
- ancient monetary systems
- ancient commercial right
- ancient fiscal laws
- general history

In order to profit from the studies of the history of accounting, you must have been prepared through prior studies of the development of business and the slow but constant evolution of our civilization.

Cultural Reason: The history of accounting is also a cultural element which should be a part of education. If one does not want to regress or become stagnant one must, through constant efforts, try to initiate some parallel discipline. Thus the functional will admit the humanism and the humanism the functional. Let us try to be open minded. It is not necessary to become an Encyclopedia, which would be as impossible as it would be pretentious. But let us have very precise views on different matters. Everyone must have some culture. At the beginning of life we first must acquire a technology but by and by we climbed the steps of the hierarchy and found out that we needed something besides technology. In fact we all need culture. It no longer suffices to know the rules of one profession. Everything changes; everything evolves around us. We cannot be a more or less intelligent machine. Let us be men in the most accomplished way, and the more we shall step up, the more

we shall be in need of culture. Others have written wonderful things on this subject. If we should have to mention a reference we believe that we like to suggest the reading of the brochure by Joseph Basil, Professor at Louvain University and entitled "The Cultural Formation of the Corps and its leaders." This brochure is full of wise suggestions. "Culture your thoughts to enrich your actions" is the synopsis of this book which appears on the cover page.

Utilitarian Reason: The study of the history of accounting must be used to demonstrate the unfolding of the mind and the practice of accounting through time, to identify the various factors responsible for the changes, and to reveal how the changes came about. The history of accounting will seek to determine the influence of the actual environment on the present and future concept of accounting. And to conclude this study will contribute to a better teaching of accounting, especially one that would be natural in underdeveloped countries.

Recreational Reason: A last reason for the study of accounting history is the present need to occupy one's leisure time. The quality of a civilization can be measured by the quality of its leisure. This is why leisure and the culture which conditions it will become the serious side of life.

We fought for the right to work, we are fighting now for the right to educate. Tomorrow we will fight for the right to have a freed culture. Beyond the work of seeking knowledge, leisure time with free work will become the third accomplishment of man's plenitude.

When thoughts and the actions get together and work in initiative selected by free choice, one's heart seems to be content, and man is happiest. Should leisure become boredom, we would immediately see a succession of aggressiveness and violence.

Permanent education is giving a new dimension to humanity and is the foremost characteristic of the civilization of leisure. The times when education stopped with the acquisition of a diploma are long gone. Today we are condemned for ever to the work of adaptation and recycling. The study of the history of accounting has just arrived at the proper time. Thanks to all of you it is in good hands.

To conclude, I would like to address a kind word to the wives of historians who are in this audience and who see their spouses bent daily over illegible scrawls, asking themselves questions as to the value of such historical research. Did you know, ladies, that most authors have dedicated their volumes of accounting history to their respective spouses? Isn't this, ladies, the proof that all this work is really done for you?

IN TRIBUTE TO H. R. HATFIELD

Introduction

Henry Rand Hatfield (1866-1945) was one of the early leaders of accounting education in American universities and perhaps the earliest individual most well known for his efforts in accounting history. His early text, *Modern Accounting*, was completed in 1908 and published in 1909. His speech outlining a "Historical Defense of Bookkeeping" provided a basis for an increased interest and awareness of American accountants and scholars in the subject matter of accounting history. The influence of this speech was to have its effect even up to today. It seems fitting that this initial issue of the Journal contain a testimony to Hatfield and his influence. For this purpose we have translated his earliest known article length work which has not been published in English. The article "Zwei Pfadfinder" (Two Pioneers) appeared in the *Zeitschrift fur Buchhaltung* (Linz, Austria) in 1909 and has been referred to by accounting historians in various works including Littleton's *Evolution*. An editorial in the October 1909 *Journal of Accountancy* directed attention to this article and the relationship of the theories it proposes to those expressed by Charles E. Sprague in his *Philosophy of Accounts*, an early leading theoretical treatise. The translation of this article retains the original sentence structure at the expense of English style, in order to preserve intended meanings.

We have also attempted an evaluation of the relevance of "Zwei Pfadfinder" as a step in the evolution of theory of accounts. This item also explores the more recent findings with regard to the general theory of accounts identified in Hatfield's article. The final portion features a glimpse into the personality of Hatfield by his son, John. These recollections provide a warm and personal insight about a respected pioneer collegiate educator and accounting historian.

Henry Rand Hatfield

"ZWEI PFADFINDER"

About ten years ago, the late Hugli¹ published in the *Zeitschrift für Buchhaltung* an essay about the origin of the natural theory of accounting, usually known as the theory of two series of accounts. In this article, he attributed the development of this new predominant theory to two German authors, G. D. Augspurg of Bremen and George Kurzbauer of Vienna, whose works appeared almost simultaneously in the early 50;s. These authors are "the pioneers of this natural theory and their merit cannot be appraised too highly." He says of Augspurg's work, which appeared in the year 1852, "Here for the first time the two account series of double-entry bookkeeping are sharply differentiated and contrasted" and that "this differentiation of the two account series of double-entry bookkeeping in their juxtaposition was a great step." This view has up to now apparently not been refuted and is repeated by Professor Julius Ziegler in his "Contribution to the Explanation of the Two Account Series of Double-Entry Bookkeeping."

The purpose of this essay is to show that two American authors, Thomas Jones and B. F. Foster, whose separate works appeared between the years 1836 and 1852, preceded the above named German authors by ten to fifteen years. In order to show this, important passages cited by Hugli are compared with similar passages from the writings of the two American authors.²

The principle on which the new doctrine with which Augspurg is credited is based, is reported by that writer as follows:

"The system of double-entry bookkeeping consists chiefly in keeping side by side two sets of accounts, the one for the entire capital and the other for the individual parts of it, and in proving by their agreement, the mathematical corrections of the results achieved."

*Translated by Richard H. Homburger. Original text appears in *Zeitschrift für Buchhaltung* (Linz), No. 4, 1909, pp. 80-86. Certain translations from the original article which are simply translations into German of English quotes, have been omitted.

But this same idea is quite clearly expressed in Foster's first work, which appeared sixteen years earlier, as follows:

"It is a primary axiom of the exact sciences that the whole is equal to the sum of its parts, and on this foundation rests the whole superstructure of Double Entry Bookkeeping. It considers property as a whole, composed of various parts—the stock account records the whole capital; the money, merchandise, and personal accounts record the component parts. Hence, there must necessarily and inevitably be a constant equality between the stock account on one hand and all the remaining accounts on the other."

In complete bookkeeping, the stock or capital is known by its particular account, without enumerating and adding together all the component parts. When, however, this general extract of the parts is made, their sum will correspond with the stock account if the books are correct; and thus, the parts and the whole mutually check and verify each other. (*A Concise Treatise on Commercial Bookkeeping*: Boston, 1836, p. 26.)

Four years later the same author writes:

"In the arrangement of a ledger by double entry, there are but two distinct classes of accounts, which may be distinguished as follows: 1) Parts of property 2) Whole property.

The first class comprises the money, merchandise, and personal accounts, with their divisions and subdivisions, from which we ascertain the nature and extent of the assets and liabilities. The second class consists of the stock account, with its branches and ramifications as Profit and Loss, Charges, Interest, Commission, and the like, from which we ascertain the amount of capital originally invested in the business and the gain or loss for any given period. (*The Theory and Practice of Bookkeeping*, illustrated and simplified. Boston, 1840, p. 23.)"

In a similar way, the other author expresses himself when he says:

"The whole Capital being entered in the Stock account, and the parts of which it is composed in the remaining accounts, constitutes the double record which marks every successive step in the compilation of the ledger. (*The Principles and Practice of Bookkeeping*, N.Y.: 1841, p. 53.)"

In explaining the purpose of the two separate series of accounts, he says:

“The purpose of a bookkeeping system in business is either to learn from it the periodic substance of the individual parts of capital and to have some control over their proper management, or to learn what result (gain or loss) the individual branches of the business have produced. From this result two essentially different kinds of bookkeeping. The main record of the first kind contains accounts which designate parts of capital, in which therefore increases and decreases in those parts are recorded; the main accounts of the second kind designate branches of business, in which are recorded in monetary terms receipts and expenditures caused by those branches. (p. 132).”

The two series of accounts which, according to Jones, are called “primary accounts” and “secondary accounts” are explained by him in a similar way as follows: “The result of any primary account is Resources, and of any secondary account, Gains, Losses, or Capital. (p 27’)

In another passage, he says that the two sides of secondary accounts indicate expenditures or, respectively, receipts (p. IX), and another time: “Each scheme is divided into accounts, to accomplish different objects in the parts; one scheme being to measure the fixed property, and the other, the gain that is accruing. (*Ibid.*, p. 55).”

Later the same author says in a more detailed fashion:

“The arrangement of Double Entry is based on the two following propositions:

Proposition I

If we can ascertain our Resources and Liabilities at any stated time, their comparison will determine the position of our affairs at that time.

Proposition II

If we can determine the position in which our affairs stood at the commencement of any period of time and our Gains and Losses during that period, we can therefrom determine our position at the end of the period.

So that by any possible way in which we may view these two distinct and independent propositions, . . . they must necessarily lead us to the same result. Double Entry, then, embraces two distinct plans of arranging the facts that have transpired in a business, each plan involving a distinct set of accounts; the one set fulfilling the conditions of the first proposition, the other, those of the second; and the agreement in the result of the two constitutes what is called the balance of books. (pp. 21-22²).55

According to Hugli, Kurzbauer did not recognize that debit is active in one of the series and passive in the other, but this was understood by Augspurg. But it appears that this clarity of vision on the part of Augspurg was ascribed to him not on the basis of a definite clue which points to it, but rather because he says that the two series of accounts are treated in a dissimilar fashion.¹ But it seems that in their concept of this important difference, the two American authors not only surpass Kurzbauer, but are at least equal to Augspurg, if they do not surpass him, too. Even if Jones and Foster do not say specifically that in the primary accounts debit contains the active and credit the passive accounts, while this is reversed in the secondary accounts, it appears, nevertheless, as if this important principle of double entry bookkeeping can be glimpsed from their writings. In the following sentences, it is to be seen:

1. The concept of debit and credit is expressly characterized as positive and negative in the primary accounts, for example;

"All debits of the primary accounts denote increase in the fixed property . . . and all the credits of the primary accounts denote decrease of the fixed property (Jones, *Principles*, etc., p. 48).

The component parts of property are distributed into debtors and creditors; the positive parts constituting the former, and the negative parts, the latter (Foster, *Double Entry Elucidated*. Boston. 1852, p. 11²)."

2. A repeated indication that debit and credit have a different significance in different accounts, for example:

"In each class of accounts, the debit items are different in their nature, and one debit is like another no further than as it belongs to the left hand column of the account

(*Ibid.*, p. 43, as it is described by Jones; see also Foster, *Theory and Practice*, etc., p. 13, and Jones, p. 20).

The debits of one arrangement affect the merchant's financial position by indicating an increase of his resources, while the debits of the other arrangement indicate outlay or decrease. . . .

Any rule, therefore, which conveys the idea that all debits affect the merchant alike must render a clear comprehension of the subject impossible. (Jones, p. IX¹)."

3. Sometimes there appears an almost definite indication of the doctrine in that, for example, Foster adds to his sentence that "The positive parts or debit items are entered in the left hand column" a footnote as follows:

"In estimating the profits of a concern, if the gain be positive, the loss will be negative, because the loss must be deducted from the gain to determine the net profit (*Theory and Practice*, p. 10)."

And even more definitely:

"It plainly appears that each set of accounts in double entry, is a comparison of outgoings and incomings—but one the reverse of the other; that is, the outgoings in the secondary, and credits in the primary accounts (Jones, p. 55²)."

Even though in the preceding, the works of Foster as well as those of Jones are cited, prior credit for the theories presented must be ascribed to the latter, without consideration of the fact that Foster's first book appeared five years before Jones' work. This can be explained in the following way: Foster has dealt liberally with Jones' ideas, borrowing from them, as Jones presented them in his lectures at the New York Commercial Academy, where Jones was Director and Foster was teacher. Not only does Jones deserve prior credit for the theories proclaimed by Foster, this right is conceded to him, even though reluctantly, by Foster. This becomes clear in a letter by Foster of August 1, 1838, which is published in the preface to Jones' first work, and which, contains, among other things, the following:

"The principal features of what I understand to be your plan of teaching bookkeeping, and for which, in my opinion, you are entitled to the merit of having originated, are the following:

3rd. Deducting from the different accounts two statements of the merchant's affairs, each showing how much he is worth.

4th. Showing that the Ledger, by double entry, contains two sorts of accounts, which you term primary and secondary, each set producing one statement of the merchant's affairs, and showing how much he is worth. The agreement in the result of the primary accounts with the results of the secondary accounts constituting the balance of the books.

I have availed myself of the information derived from your oral lectures in the compilation of my recent work entitled *The Merchant's Manual*, so far as it relates to the explanation of the Ledger . . . an acknowledgement of which shall be made in my next publication on this subject, and which has been inadvertently omitted in the present edition."

It is striking, however, that Foster, after designating in his book which appeared in 1852, the passage about debit and credit as originating from Jones, he repeats this passage in his edition of 1866 without quotation marks, and without acknowledgement. And then, while the preface to his work of 1840 acknowledges his debt to Jones, no such acknowledgement is expressed in his later work, and expression is given to the broad statement that "modern publications show nothing original or systematic about them."

The theories which are contained in the earlier works of Foster must, therefore, without doubt be ascribed to Jones. From all indications Foster was not even quite conscious of the significance of the theory which he borrowed so freely. This can be seen, for example, in the fact that even though he repeats Jones' words about the different meaning of debit and credit in the different series of accounts, he tries nevertheless to give a universal rule for the entries into the journal and retains the well-known formula "the thing received is debtor to the thing delivered." Jones, on the other hand, is consistent and keeps in mind, in his entire work, the difference between the two series of accounts. On the other hand, Foster demonstrates a far-reaching knowledge of the literature on bookkeeping, he often quotes not only from French, but also from English works, and he was a Bibliophile. He presented an extensive list of works in the English language about bookkeeping and said that he owned 169 of these. His own works enjoyed con-

siderable recognition in reprint editions, and several have also appeared in England.

This essay, without attempting to establish a connection between the writings of these two American authors with those of Augspurg and Kurzbauer, is intended to establish that, in point of priority, the credit that has so far been given to the German authors, should be attributed to Thomas Jones.

FOOTNOTES

¹See No. 70 of our Journal (January, 1898).

²Unfortunately, no copy of these works could be found in the United States, and an order which I placed already more than two years ago with a Berlin establishment for old books was without success. I must, therefore, limit myself to references to Hugli's work. The page numbers refer to the reprint of his article in his "Studies on Bookkeeping, Bern, 1900.- Editor's Note: The work of B. D. Augspurg should still be available in several copies at Ed. Hampe in Bremen. George Kurzbauer's "Bookkeeping" has appeared in a new edition, prepared by his son, at Karl Gerold Son in Vienna.

³With regard to this point, the author of this article has difficulties, as he cannot consult any copy of the book by Augspurg.

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THE RELEVANCE OF "ZWEI PFADFINDER"

While double-entry as a method was rather fully developed at the time of Luca Paciolo (1494) its underlying concepts were less well understood and explained for some time. Early teachers were more concerned with the mechanics of debits and credits than with the underlying *theory of accounts* which could explain the economic rationale of the system. Even after such a theory had begun to develop, it was concerned more with the nature and meaning of individual accounts and their classification than with the overall significance and meaning of financial reports which could be drawn therefrom. Until the last century, therefore, a theory of valuation which must essentially rest upon an established theory of accounts, could not be adequately developed. All of this suggests the importance of establishing an understanding as to when and how a *theory of accounts* emerged.

Zweikonten Theorie

The article by Hatfield deals with one rather peculiar phase in the development of the theory of accounts, namely the "*Zweikonten-Theorie*" or theory of two account series which was prominent in Germany and Switzerland in the middle and later part of the nineteenth century. This theory was spearheaded by Augspurg and Kurtzbauer and, around the turn of the century more fully developed by Hugli and Schar. It is Hatfield's contention that two American writers, Thomas Jones and B. F. Foster preceded Augspurg and Kurtzbauer in the discovery of this *theory of accounts*.

The substance of this theory is the classification of all accounts into two main categories: on one hand, those representing the substance of the business investment (*Vermoögens-Bestandteile*)—such as the various asset and liability accounts; on the other hand, those

representing the results of the investment (*Reinvermoegen*) and (*Erfolgskonten*) such as the capital, revenue and expense accounts.

At first glance, such a theory would seem to provide the foundation for our modern proprietary theory of accounts and the accounting equation which was developed by Cronhelm and others during the nineteenth century and which, in our modern teaching approach to double-entry bookkeeping, have replaced the account personification approach used for so long and so extensively in the past. On the other hand, this theory of a residual net worth is so closely allied to the double-entry idea itself that it is reasonable to assume that it was intuitively understood by those who developed the double-entry procedure originally. The difference between the theory of the two account series and the somewhat older personalistic account theory is that the advocates of the personalistic theory viewed the account or accounts of the proprietor as claimants against the enterprise not as the "other side of the same coin."

Van Gezel's Dichotomy

Early traces of the theory of the two account series are found among authors of the 16th century Flemish school. [Littleton, p. 202; Chatfield, p. 55]. Simon Stevin is regarded by 19th century authors to have been the precursor of the theory [ten Have, p. 64]. Yamey notes, however, that it was Van Gezel (1681) who should receive the credit for devising the first fully satisfactory account classification under this theory, some eighty years after Stevin [Yamey, p. 155]. Van Gezel employed his own terminology and his writing was sometimes difficult to follow, therefore his book was not well known and is not believed to have reached a second edition, a factor somewhat unusual for books of that era. The title and specifics of his work lead us to additional insights as to the purposes he sought to fulfill:

Short treatise of the contemplative Instruction of Commercial Accounting, useful to all those who like the true Knowledge of this Art and are well-disposed to understand it more thoroughly than it was ever described or taught to this day, . . . [ten Have, p. 70]

Yamey acknowledges Van Gezel's dichotomy as follows:

"At the most general level of classification, he wrote, there are only two classes of accounts: "own" accounts (*eigene*) and "contrary" accounts (*tegengestelde*). An own

account is one "whose debit means the merchant's [owner's] debit, and whose credit means the merchant's credit." The contrary accounts include accounts for other persons, for cash and for goods. A contrary account is one "whose debit means the merchant's credit, and whose credit means the merchant's debit." This somewhat cryptic explanation is elucidated immediately. The own accounts are kept so that the owner can know how big his initial capital (estate) is, and why and by how much it increases or decreases in a period of trading. The contrary accounts, on the other hand, are necessary to show how the owner "stands with each person, and money, and goods, with whom or which he trades." Together the own and the contrary accounts are also necessary "to provide the proof of each other in the making of the balance account." The rules for debiting and crediting ledger accounts are then derived. The author distinguishes three classes of transactions or events (*posten*): advantageous (*voordeelig*), disadvantageous (*nadeelig*), and indifferent (*middel-matig*). Transactions of the first class are those which (taken by themselves) increase the owner's capital; the second are those which decrease it; and the third are those which leave it unchanged. It follows that for an advantageous transaction an own account must be credited and a contrary account debited; that the converse applies for a disadvantageous transaction; and that an indifferent transaction affects contrary accounts alone.

In his rules for making debits and credits, van Gezel placed the emphasis on the nature of the accounts and not, as was customary, on the type of the transaction. (Yamey, pp. 155-6)"

Yamey further indicates that earlier works by moschetti (Venice, 1610) suggest a familiarity with Stevin's writings and correspond to Van Gezel's treatment, apparently having derived the approach independently. Zambelli (1671), he notes, also had a bi-partite classification but arrived at it by a different route than that used by the Flemish writers.

Controversy

The issue of the first discovery of a bi-partite theory of accounts has lost much of its appeal because of the corporate entity theory

and newer international developments. Yet we stand to benefit in learning more about the origins of this theory in the sense we acknowledge that all knowledge is the product of many ages- and when one link in the chain of development is lost it becomes irreplaceable.

Resolution of the conflicts over the origins of this theory is likely to involve understandings and misunderstandings of a host of vague notions advanced by early writers which, when given the current level of knowledge, appear to resemble forerunners of our modern theory of accounts. Historians must take care to distinguish between a concept's initial *function* and its *dialectic* relation to the process of accounting development. Undoubtedly scholars will continue to discover evidence which hints of earlier uses of a bipartite theory of accounts and further controversy will ensue. A comparison could be drawn between this and the more widely known controversy concerning when the idea of the double-entry form first originated. Perhaps neither controversy will ever be completely settled—a prospect which holds a particular appeal to the historian and the cynic.

Contemporary Relevance

From about 1894 to 1925, Frese notes that there existed in German accounting and business periodicals (notably *Zeitschrift für Buchhaltung* and *Zeitschrift für Handelswissenschaft und Handelsspraxis*) a series of heated literary debates as to the merits of fundamental theories of accounts related to double entry. [Frese, *passim*]. Hatfield's article enters into the thick of this debate in a timely and authoritative manner to establish the "theoretical credentials" of American writers in topics thought to be previously reserved for the advanced accounting intellectual communities of Europe. We now know of the contributions of Hautschul (1840) which are contemporary to Jones' views, and that we have evidence that earlier European writers including Crippa (1838) [Gomberg, p. 48], Cronhelm (1818), Hostcraft (1735), and Malcolm (1718) had related the essence of proprietary theory [Littleton, p. 201; Chatfield, p. 221] much earlier. The point remains that although Hatfield's research was supplanted, he gained the attention of the theoretical community, and the practitioner as well (recall that the *Journal of Accountancy* commented on the article) on a matter related to the maturity of American theory *per se*. This is the relevance of "Zwei Pfadfinder" to historians at this point of our study. Hatfield's article suggests a milestone as to the maturity of our scholars and writers

—in that by the mid nineteenth century American writers had developed proprietary theory comparably with theoreticians of other leading countries. By the twentieth century American theorists were in a position to be regarded by other nations as capable of understanding and contributing to the overall theory of accounting.

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RECOLLECTIONS ABOUT FATHER

I have prepared a sketch of my father as a person rather than as a teacher of accounting, a university administrator and an author of textbooks and numerous articles in accounting journals. Hopefully this will be of help to those who did not know my father.

Henry Rand Hatfield and Ethel Adelia Glover met at the University of Chicago where they were both working for their doctoral degrees. They were married in 1898 and remained at the University of Chicago until 1904. He had attained the rank of Associate Professor and was also Dean of the College of Commerce and Administration. At that time he was offered and accepted a position at the University of California (Berkeley) where he was to remain until his retirement in 1937, having served at various times as Dean of the College of Commerce and as Dean of the Faculties. Even after official retirement he continued his interest in the University and in the theory of accounting. He received two honorary degrees of LL.D., one from his alma mater Northwestern University and another from the University of California. He died on Christmas Day 1945.

I remember him as a devoted husband and father and as a man of wide interests outside his profession. He was an active church member and delighted in calling to the attention of the minister or the Methodist Bishop any error in fact or grammar. His undergraduate studies at Northwestern ably prepared him for this, for it consisted largely of Latin and Greek and he delighted in arguments with a distinguished law professor over fine points in Latin construction or grammar.

He was an eager collector of early books on accounting, mostly Italian, as I remember, and he studied that language in order to better understand them. These books were given to the University of California Library. When he heard of one being available in the market at a price he was unable to pay, he approached a banker friend in San Francisco and suggested that the latter might like to buy the book for the University. He also acquired a collection of detective stories. One time when visiting a student who was tem-

porarily confined in the University hospital he was dismayed to find that the only reading material available was *Pollyanna*. He immediately selected about 100 of his best mystery stories and donated them to the hospital.

He had a keen, but never malicious, sense of humor and was in great demand as a toastmaster, for he was always able to seize on something a previous speaker had said and come up with an extemporaneous remark that delighted the audience. He never hesitated to tell stories which held him up in the role of the absent minded professor. One that I recall took place when he was teaching a session at Columbia University summer school. He noticed one evening that there was a spot on the back of a coat he usually wore. He planned to take it to the cleaner the following morning and to be sure that the spot was not overlooked he pinned a note on the coat reading "Please notice the spot"! Of course, the next morning he forgot all about it and wore the coat, with the note attached, to class.

Another favorite story concerned a one o'clock class on a warm afternoon when a student in the front row fell asleep with his mouth open. Without a word Father picked a short piece of chalk from the blackboard and threw it neatly into the student's mouth. He said he had never seen a more surprised look on anyone's face.

One Sunday morning he looked outside and saw a woman picking an ample bunch of daffodils from his garden. He followed her at a discreet distance and saw her go into a church a block away, leaving the daffodils on a ledge beside the door as she entered. He returned home and found one of the colored cards that used to be given out at Sunday school. He returned to the church and placed the card reading "Thou shalt not steal" on top of the daffodils and quietly returned home.

He was a lover of the out of doors and I can remember many hikes on Mt. Tamalpais, north of the Golden Gate and more extensive camping trips in the Sierra Nevada. He did not particularly care for fishing but was always eager and expert in cooking the fish that others had caught. I remember one two week trip, which included climbing to the summit of Mt. Whitney, when the fishing was so good that we grew tired of fresh trout three times a day. He suggested that for a change we might try fish chowder which he made with canned milk, potatoes, onions and whatever else was available. Everyone hailed it as a great gastronomic triumph.

One of his great pleasures was travel. He and my mother took many trips, sometimes accompanied by others, to England and the

European continent. As a collector, he filled over twenty large scrap-books with photographs, postcards, menus, theater programs and other things of interest to him. At the request of the University archivist, most of these books have been turned over to the University of California library.

Father derived a great deal of pleasure from his profession. He loved his students and the University. He had very tempting offers to go elsewhere but he elected to remain at Berkeley. Although he never practiced public accounting, he was elected in 1910 as the first, and I believe the only, honorary member of the California State Society of Certified Public Accountants.

Tito Antoni

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THE PISAN DOCUMENT OF PHILADELPHIA

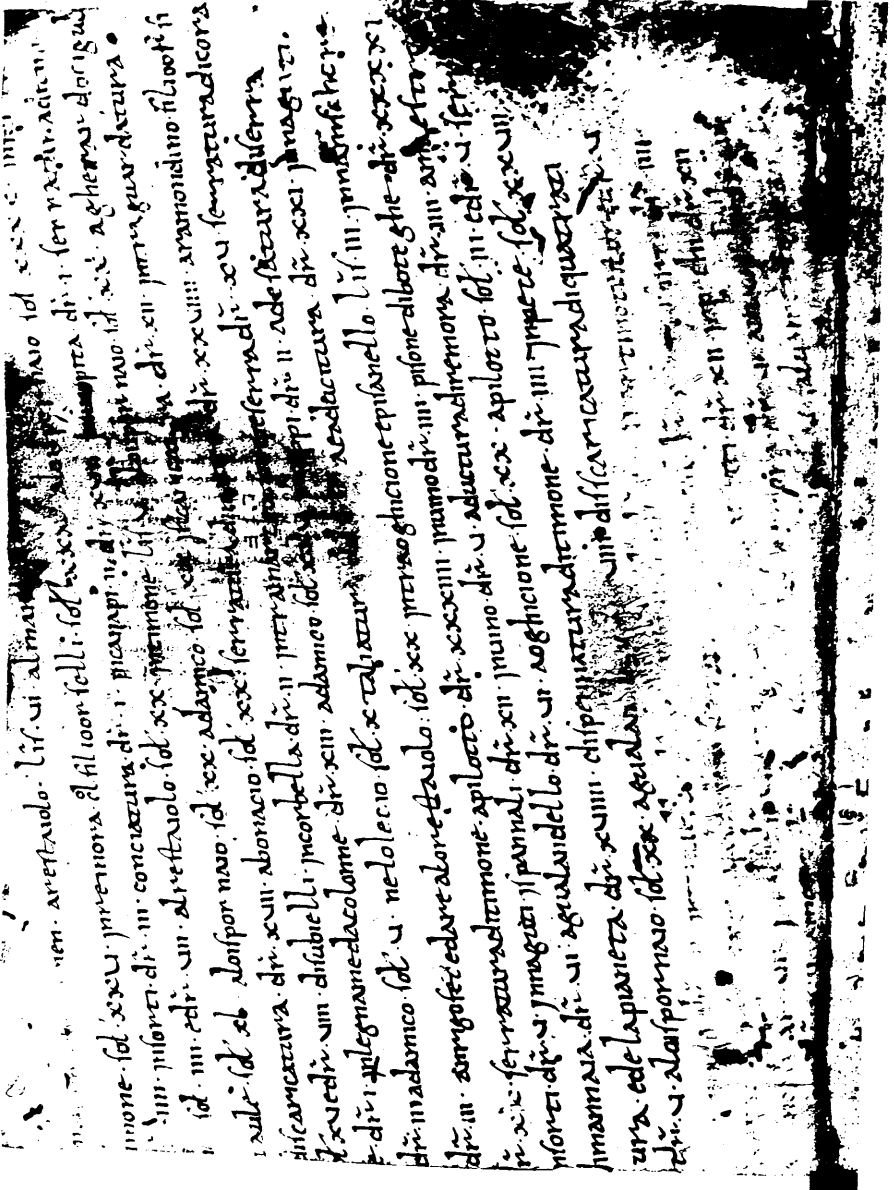
(La Carta Pisana di Filadelfia)*

Until recently the oldest known specimen of account was considered to be one from the year 1211, contained on the fragments of two parchment sheets that were originally part of a book belonging to Florentine bankers operating in Bologna.¹ This early Florentine document contains a series of accounting items relating to loans of money at interest. The items appeared without separation between them or the use of columns for stating the values. As an important early document written in vernacular Italian, this account was published in 1887 in the *Historical Journal of Italian Literature* by Pietro Santini.² Subsequently it was researched by Fabio Besta, who in his treatise, *Accountancy (La Ragioneria)*,³ emphasized its value with respect to accounting. The fact that no similar document was found over many years supported the opinion that it was the oldest example of European bookkeeping.

We are now able to back date the origin of bookkeeping by almost a century through the fortunate discovery of a specimen drawn up at the end of the 11th century or in the first decade of the 12th century by a Pisan shipbuilder to record expenditures incurred in the building or repairing of a galley. This account is the so-called Pisan document of Philadelphia (*La Carta Pisana di Filadelfia*) preserved in the Free Library of Philadelphia, Pennsylvania. It was published in the journal, *Studi di Filologia Italiana* in 1973 by its discoverer, Ignazio Baldelli, professor of history of grammar and Italian language at the University of Rome.

This fragmentary account was discovered serving as a lining for the back cover of a manuscript, the "*Liber Sententiarum*." It is catalogued as item no. 136 in the donation made by the John F. Lewis family to the Free Library of Philadelphia where it is kept in the rare book department. Lewis had acquired the manuscript in 1915 from a dealer in antiques, Arno W. Voinich, in London but

*A paper delivered at the Second World Congress of Accounting Historians.



La Carta Pisana di Filadelfia

Source
Rare Book Department, The Free Library of Philadelphia

nothing further is known about previous transfers of ownership. The manuscript was very probably lost during the inauspicious period of Florentine domination over Pisa in the 15th century.

The parchment containing the account was added to the manuscript after having been trimmed top and bottom in a direction oblique to the writing. As a result some of the initial lines and the final section were lost. There also had been an attempt made to scrape the writing off the parchment in order to re-use it, but fortunately this attempt was halted at line 16. In all, 188 words of the original document remain. They are written in vulgar western Tuscan with a precise Caroline minuscule. The development of some of the letters is characteristic of the first decades of the 12th century and closely resembles Pisan documents drawn up between the end of the 11th and the beginning of the 12th century. The exceptionally precise dating of this text is based upon paleographic findings. The period in which our unknown shipbuilder drew up his document is a few years after the first Crusade (1095-1099) and almost contemporaneous with the Pisan conquest of the Balearic Islands (1114-1115). It precedes by some 80 years the publication of "*Liber Abaci*" of Leonardo Fibonacci (1202) which marked the beginning of the use of Indo-Arabic numerals in the western world.

In the document expenditures are expressed in Roman numerals to indicate lire, soldi and deniers. The currency in use as the means of payment was the coined denier, but it is not certain whether it was from the ancient Pisa or the Lucca mint. From a sales contract (*cartula venditionis*) dated February 2nd, 1137, it is possible to ascertain that the new Pisan money (*denariorum nove Pisane monete*) in place of Luccan money (*denariorum Lucensis*) was in use as a means of payment at that time.⁴

Expenditures on the parchment relate to shipbuilding costs but it is unclear whether they refer to the building of a completely new galley or to extensive repairs to one or more vessels. There is a payment of 1 lira and 9 deniers for *matieria* or *madiere*, the wood for the frame floor (which is the central part under the ribs of the hull that is attached to the keel) but no mention is made of expenditures for any of the other essential parts of a vessel, keel, futtock, bulwarks, beams, etc., unless these expenditures are included in the expenditures for wood planks. However, expenditures for non-structural parts of the ship are itemized: rudder (L.6 . 12), rigging (1.8), sails, and there are four successive payments of L. 5 to the *ispornaio*, the person who builds or repairs the ram or the cutwater. This suggests a repairing and outfitting operation of one

or more galleys for military purposes. The galley of the time was a type of rowing vessel equipped with a sail and was used both as a means of commercial transport and as an instrument of piracy and warfare.

In Pisa the investment of capital in shipbuilding and ship-out fitting must have been considerable since the naval units destined for the conquest of the Balearic Islands, according to available sources, numbered 300 and those involved in the enterprise of 1087 at Almedia, Tunisia, numbered 1,000.⁵ In the early years of the 12th century a galley would cost about 45 lire, according to calculations based upon some documents of the Pisan Commune concerning the construction of two ships and four galleys. The sum of all legible outlays in the fragmentary account is 14 lire, 389 soldi and 400 deniers, which corresponds to 35 lire, 2 soldi and 4 deniers.⁶ This approaches the cost of building a galley at the time. One must keep in mind, however, that several payments were lost through the clipping and scraping of the parchment.

Various favorable factors such as the availability of labor and capital, the geographic location and the development of venture organizational structures contributed to the growth of shipbuilding activity at Pisa. An essential element of this development was the merchant shipbuilder who undertook the construction of galleys on a subcontract basis using a series of work orders passed on to specialized artisans for their execution. This nature of the shipbuilding activity at Pisa is readily deduced from the Pisan document of Philadelphia.

THE "CARTA PISANA" OF PHILADELPHIA (1120-1130)

[I]n nomine domini amen. a restaiolo.lis.vi.al marmuto.sol. . . .

[t]imone.sol.xxv.in remora.col filio Orselli.sol.xxx.alo ispornaio.sol. xxx.in sorti

[d]r.iii.in sorti.dr.iii.conciatura.dr.i.in canapi.ii.dr.xvii.in sinopita.dr.i. serratura di timo-

[n]e.sol.iii.e dr.vii.al restaiolo.sol.xx.in timeone.lis.v. lo ispornaio.sol. xx.a Gherardo Ciguli taule.sol.xl.a lo ispornaio.sol.xx.ad Amico. sol.xx.iscaricatura.dr.xii.intro guardatura

[e] discaricatura.dr.xvii.a Bonacio.sol.xx.serratura di matieia dr. xxviii.a Ramondino.filio Orsi

[s]ol.xv e dr.vii.di subielli.in corbella.dr.ii.intra marchio e sorti e serra dr.xv. serratura di cora-

[J]e.dr.i.in legname da colonne.dr.xiii.ad Amico.sol.xxv.in coppi.dr. ii.adesatura di serra dr.iii.ad Amico.sol.v.nelo lecio.sol.x.taliatura dolatura e audcitura.dr.xxi.inn aguti dr. iii.Anrigo fece dare also restaiolo.sol.xx.intra Oghicione e Pisanello.lisi.iii.inn amschere

[d]r.xx.serratura di timone.a Pilotto.dr.xxxiiii.in vino dr.iiii.pisone di boteghe.dr.xxxx.

[i]n sorti.dr.v.inn aguti ispannali.dr.xii.in vino.dr.v.aductura di remora.dr.iiii.a maestro

[d]i mannaia.dr.vi.a. Gualandello.dr.vi.a. Oghicione.solxx.a Pilotto. sol.iii.e dr.v.serra-

[t]ura e dela pianeta.dr.xviii.dispennatura di timone.dr.iiii.in pece. sol.xxvii.

[e] dr.alo ispornaio.sol.xx.a Guala[ndello dr.] viii.disscaricatura di quadrati

... invino.dr.v.in trivelle.dr. ... a Martino testore.dr.v.

... xxx.a palomari.serratura di matieia.dr. ... in sorti.dr.iiii.

... dr.vii.in pali.dr.vi. ... dr.xii.in pechi.dr.xii.

... .. aductura di remora.dr.vii.a manoalo.dr.vi.

... .. sol.v.salvamento di taule.

.....

.....

THE "CARTA PISANA" OF PHILADELPHIA (1120-1130)
(English Translation)

In the name of God, amen. To the rope-maker lis.6, to the sail-maker sol. ...

[For] rudder sol.25, for oars with the son of Orselli sol.30, to the ram-restorer sol.40, for masting-wood dr.4, for masting-wood dr.3, for caulking dr.1, for 2 ropes dr.17, for sinopite dr.1, for sawing the rudder sol.4 and dr.7, to the rope-maker sol.20, for the rudder lis.5, to the ram-restorer sol.20, to Gherardo Ciguli for boards sol.40, to the ram restorer sol. 20, to Amico sol. 20, for unloading dr.12, for guardianship and unloading dr. 17, to Bonacio sol.20 , for sawing the floor timber dr. 29, to Ramoidino son of Orsi sol. 15 and dr. 7 for pivots, for baskets dr. 2, for hammers and masting-wood and saw dr. 15, for sawing the core dr. 1, for lumber to make columns dr. 13, to Amico sol. 25, for jars dr. 2, for the saw shaft dr. 3,

to Amico sol. 5, for the oak sol. 5, for cutting, planing and parching
 dr. 21, for nails dr. 3,
 Anrigo gave to the rope-maker sol. 20, to Oghicione and Pisanello
 lis.3, for food dr. 20,
 for sawing the rudder to Pilotto dr. 34, for wind dr. 4, rent of the
 shop dr. 41,
 for masting-wood dr. 5, for long nails dr. 12, for wine dr. 5, for finish-
 ing the oars sol. 4, to the master carpenter dr. 6,
 to Gualandello dr. 6, to Oghicione sol. 20, to Pilotto sol. 3 and dr. 5,
 for sawing and planing dr. 19,
 for pruning the rudder dr. 4, for pitch sol. 27 and dr. 5,
 to the ram-restorer sol. 20, to Gualandello dr. 8, for unloading the
 rigging
 for wine dr.5, for augers dr. . . . , to Martino, weaver, dr.5
 30 to divers, for sawing the floor timber dr. .., for masting-
 wood dr.4
 dr.7, for poles dr.6, dr.12, for tar dr.12
 for finishing the oars dr.7, to the hodman
 dr.6
 sol.5, for preserving the boards.

It is to be noted that in this naval account we find the oldest ex-
 ample of management from which guidelines were taken to be used
 by all entrepreneurs in the following centuries. The manufacture of
 products from wool, iron bar or leather was accomplished through
 the synthesis of a series of commissions passed for execution to
 external concerns. The merchant-entrepreneur initiated and con-
 trolled the various phases of the work by a series of work orders
 without participating directly in the productive process. Our ship-
 builder, as inferred from the account, maintained the economic
 direction of all phases of the galley's construction, supplied the
 raw materials to the artisans, paid them for their work and rented
 the shipyard facilities for the assembly of the vessels. Thus the
 Pisan document disclosed the use of a practical shipyard technology
 in an age when seafaring and merchant activities were changing
 many aspects of our western civilization. It is significant that the
 account is recorded in vulgar Pisan and that the terminology used
 relates to the sea.

Conclusions

The Pisan account of Philadelphia shows that even as early as the 11th century there existed a need to record business transactions. From this early account it is possible to infer certain guidelines which were used to manage shipbuilding activities. A somewhat systematic bookkeeping method was used in making the entries in this account but it was a primitive arrangement in which the transactions were recorded sequentially in paragraph form without the use of columns for the statement of values.

It seems clear that the rule of accounting which appeared about a few decades later in the "*liber abaci*" of Leonardo of Pisa was unknown to this shipbuilder. This rule required the bookkeeper ". . . to write down in a lined column the amount of every expense by placing the lire under the lire—and to total it with care."⁷ At that time the lack of Indo-Arabic enumeration was compensated by the use of an abacus board.

Although we are now able to refer to the Pisan document of Philadelphia as the oldest known account, we must not assume that even in earlier times similar accounts were not used. In fact, it is not possible that so many entrepreneurs—using different kinds of organizational units for capital accumulation in diversified fields such as real estate, industry, banking and trading of manufactured goods—could have managed without the account, that most necessary instrument of accounting. It is to be hoped that new discoveries in museums, archives, or libraries elsewhere, like that of *La Carta Pisan di Filadelfia*, will bring to light other and earlier examples of accounting and expand our knowledge of the methods in use.

FOOTNOTES

¹Biblioteca Mediceo.

²Santini, pp. 392-395.

³Besta, pp. 312-313, 422-423.

⁴*Archivio Di Stato Di Pisa*.

⁵Loi, editor.

⁶Conversion is based upon 12 deniers = 1 soldo; 20 soldi = 1 lira.

⁷Fibonacci, XI. 21.

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THE INTRODUCTION OF WESTERN BOOKKEEPING INTO JAPAN*

Double-entry bookkeeping is believed to have originated in medieval Italy and, as it developed, writers on the subject such as Luca Pacioli helped spread the system to the rest of Europe in the paths of Italian trade. In those countries there were practically no indigenous bookkeeping methods to impede the adoption of the new system. In Japan, however, a quite adequate method had long been firmly established and was continued in use by most merchants long after double-entry bookkeeping was introduced.

Francois Caron, director of the factory of the Dutch East India Company in Hirado from 1639 to 1641 was the first Westerner to comment on Japanese bookkeeping. In his report to the Governor General of Batavia he stated:

“They have not the Italian manner of keeping Books, and yet fail not in their calculations; they reckon with little pellets, stuck upon little sticks upon a board, for the same purpose, after the manner of the Chineses, wherewith they will add, multiply, and divide, with more facility and certainty than we with Counters.”¹

Indigenous Japanese Bookkeeping in Feudal Days

The Economic Background

In the year 1881, the Japanese government investigated bookkeeping methods of the average tradesman throughout the country and published *Shojikanrei Ruishu* (Compilation of Commerical Usage). The study disclosed that the traditional usage from the Tokugawa era (1603-1867) was still prevalent. The system was characterized by a variation in the number of account books and the lack of uniformity as a whole.

*Based upon a paper delivered at the Second World Congress of Accounting Historians.

Larger merchants and wealthier families evolved more elaborate and ingenious systems of recording to serve their needs. These systems were cherished as a secret of the family and handed down from father to son. They were not made public in the Tokugawa era. The above mentioned *Shojikanrei Ruishu* was the first to describe any of these systems to the public. Here were illustrated the account books of two Hyogo merchants consisting respectively of twenty five and twenty nine books. These elaborate systems kept with great care in few large families were a phenomenal contrast with the common system prevailing among a multitude of small businesses.

The *Shojikanrei Ruishu* did not receive a wide distribution however and it was not until 1936 that Professors Yasutaro Hirai and Katsuji Yamashita found "Izumo Bookkeeping" and brought it to the attention of the academic circle. They disclosed the bookkeeping system of the Tanabe Family, millionaire owners of iron forges in the early years of the nineteenth century.²

After World War II interest in the historical development of old business firms increased and research was carried out based upon the actual data in account books and records of the famous Mitsui, Koonoike, Nakai, Hasegawa and some more Families of the Tokugawa period. In 1962 Eiichiro Ogura, Professor of Economics, Shiga National University published an outstanding book, *Goshu Nakaike Choainoho* (Bookkeeping Method of the Nakai Family).³ It was based upon the actual books and records of a prosperous business in drugs, dry goods, grain, etc. for a period of over one hundred and fifty years from 1734. More than 30 branches scattered over the country were controlled by the head of the family through annual balancing and reporting of accounts. Imputed interest was charged to each branch in evaluating their operations. A distinction of Nakai's bookkeeping was that its main ledger, *daiukucho*, contained all accounts from which *tanaoroshi mokuroku* (inventory accounts) were prepared every year. The inventory accounts were in three parts showing respectively operating results from a balance sheet calculation of capital, liabilities and assets, and an itemized and a summarized statement of income.

Although the systems of the large mercantile families were kept secret, a written manual was sometimes prepared for the guidance of future generations. Such was the case of the Nakai Family which had prepared in about 1828 a manual listing 47 books together with a description of the items to be entered in each. However, no author attempted to formulate a basic theory of accounts and no text

book was written. Therefore, as Arthur Woolf stated,⁴ no uniform accounting system existed in Japan. Nevertheless, there were several basic similarities or common characteristics in the isolated systems which were developed independently, probably because of the fact that in order to maintain the effectiveness of a system it must constantly be compatible with the common environment in which it operates.

Such was the situation of Japan when Western bookkeeping was first introduced.⁵ The prosperous mercantile families had gained the real power in the feudal society and adhered to their traditional methods of keeping books long after they had been replaced by the new method after the restoration of the Meiji Government.

Characteristics of the Traditional System

As stated before, the bookkeeping systems of both small and large merchants were far from uniform. The names of books and the system of record keeping varied in different businesses and districts. The most popular books, however, were a personal ledger (*daifukucho*), a purchase book (*kaicho*), a sales book (*uricho*), and a cash book (*kingindeiricho*).

Account books were made of common writing paper, usually about 34 x 44 cm. in size, folded in two and bound either at the end or the middle of the paper. These books were neither ruled nor paged. Entries for deductions or decreases were marked with a Japanese character to signify their nature. Sometimes the original entries were dimly struck out or marked with a symbol resembling an inverted capital letter L, instead of making a contra entry.

The most conspicuous difference of traditional Japanese bookkeeping from Western bookkeeping is its treatment of fixed assets which are charged to expenses when purchased. Another difference, the use of a multitude of account books, can probably be explained by the narrowness of the paper and the large characters employed. The lack of systematic arrangements and classification of recordings has also been noted.

But in some of its aspects Japanese traditional bookkeeping was curiously similar to the double entry system. In Nakai's bookkeeping method, as Professor Ogura notes, a duality of entry was maintained throughout the entire system. All entries were made in pairs in different books and checked against each other and marked with a stamp. For instance, the total of cash sales entered in the sales book was balanced with a cash receipts entry in the cash

book. In the same way all entries were balanced and marked one by one continuously through all related account books to the final end, the annual inventories. These provided a proof of entries and calculations and also substantiated the duality of entries maintained throughout the whole system. The Tanabe family system provided for three semi-annual statements, one statement of assets and liabilities, and two income statements respectively showing (1) net results by comparing opening with closing balances of assets and liabilities⁶ and (2) summaries of revenues & expenses and operation results. One was prepared by "inventory method" and the other by "derivation method."⁷ Tanabe businessmen called those "double-sided accounts."

Debits & Credits and Some Contradistinctive Terms in Japan

There are several contradistinctive terms to denote the natural duality involved in business transactions in Japan, as follows:

<i>Japanese Terms</i>	<i>English Equivalent</i> s
1. <i>Kasi & Kari</i> or <i>Tai & Shaku</i>	Lending & Borrowing
2. <i>Sui & Too</i> or <i>De & Iri</i>	Payment & Receipt or Outgoing & Incoming or Outlay & Income
3. <i>Shu & Shi</i>	Receipt & Payment
4. <i>Son & Toku</i>	Loss & Gain

At present, "debit & credit" in Japanese are "*kari & kashi*" or "*karikata & kashikata*". But strictly speaking, there were no Japanese words identical in sense and usage with "debit & credit". The early authors had to learn by trial and error. At the beginning, the Osaka Mint adopted "*sui & too*" (outgoing & incoming) in place of "debit & credit" and used them for eleven years until "*karikata & kashikata*" replaced "*sui & too*" in 1882. Fukuzawa in his *Choainoho* rendered them into "*kari & kashi*" with the following explanation;

"In Western Bookkeeping, they use 'Debit & Credit' from customer's standpoint, while in Japan the terms '*kari & kashi*' are used from shopkeeper's point of view.

It is easier for us to understand to reverse 'Debit & Credit' or to consider all transactions as being analogous with money transactions and substitute the terms 'Receipt & Payment' for 'Debit & Credit', so as to conform closer to conception of the people of Japan." (Abridged)⁸

However, in view of increasing dealings with foreigners, Fukuzawa decided to use the terms “*kari & kashi*” (debit & credit), rather than his own suggested terminology. In *Ginko Bokiseiho* published six months later than *Choainoho*, Fukuzawa’s idea was adopted by his former students who were among those who translated the original manuscript of Shand. They first explained principles of debtor & creditor basing on C. C. Marsh’s Bank Bookkeeping⁹ and then touched Fukuzawa’s idea, “an opinion to construe Debit & Credit as Receipt & Payment”,¹⁰ and translated “credit slip” and “debit slip” as “payment slip” in *Ginko Bokiseiho*. This gave rise to a system of “*Shushi Bokiho*” (Receipt & Payment Bookkeeping or Cash Method Bookkeeping) which gained a great popularity for sometime before the World War II in Japan.¹¹

Japanese Bookkeeping Versus Western Bookkeeping

The Committee on Accounting History of the American Accounting Association once suggested the possibility of comparative historical research among different countries.¹² In Japan, however, such a comparison was made a century ago. *Wao Chomen Kurabe* (Japanese & Western Bookkeeping Compared), 1878, by Kiyoshi Fujii (1851-?), a teacher of Kobe Shogyo Koshujo (Kobe Commercial School) is an early example. The author was a pupil of Fukuzawa and once studied bookkeeping at the Osaka Mint. This book consists of two volumes and illustrates three sets of books in two ways, (1) Western bookkeeping of ruled books with horizontal decimal notation of Japanese figures, and (2) Japanese bookkeeping of unruled books and vertical traditional notation of Japanese figures. The first set of books consists of three slips, a Journal and a ledger as follows:

Payment slip

Transfer slip Day Book General Ledger Daily Balance Sheet

Receipt slip

The Day Book is a cash journal (with three columns on each side; cash, transfer and total), evidently taken from Shand’s Bank Bookkeeping together with slips and a ledger. The author introduced the transfer slip for the first time in Japan. This is the origin of the form which was later called “Shand’s Bookkeeping” and spread all over the country before World War II.

Using the unruled books of Japanese bookkeeping the author suggested that entries in the day book (cash journal) be made in black for cash and in red for transfer; and all entries in general ledger be marked with a character signifying either receipt or payment. This was certainly an innovation from the traditional bookkeeping method of Japan, but it was too complicated to be of practical use. The comparison presented in *Wao Chomen Kurabe* brought out clearly the superiority of the column-ruled books and decimal notation to the unruled books and traditional notation of Japan.

Another comparison was made in *Bokigaku Seiri* (Theory of Science of Bookkeeping), 1879, by Shin-ichi Kure (1848-?). The author studied English from Japanese teachers and an American, Carroll, by name, and operated a private school himself. He compiled this book based on the first part of William Inglis's *Book-keeping by Single & Double Entry*. This is the second bookkeeping text to have adopted Arabic figures in Japan. The author showed and explained two English forms of balance sheets, horizontal notation of Arabic figures and vertical notation of Japanese figures for comparison. He also illustrated profit calculations charging cost of furniture to expenses when incurred. Here he has pointed out for the first time in Japan the important differences of Western bookkeeping from our own.

The Japanese Monetary System

The money system of the Tokugawa era (1603-1867) was complicated; three kinds of coins (gold, silver and copper) and notes issued by the local feudal lords were in circulation and rates of exchange fluctuated from time to time. Each entry in the cash book was marked with a Japanese character to signify the kind of money. The units of money and an example of exchange rate are as follows;¹³

Units of Money

Gold	4 <i>shu</i> = 1 <i>bu</i> ¹⁴	4 <i>bu</i> = 1 <i>ryo</i>
Silver	10 <i>rin</i> = 1 <i>bu</i> ¹⁴	10 <i>bu</i> = 1 <i>monme</i>
Copper	1,000 <i>mon</i> = 1 <i>kan</i>	

Exchange Rate

1 gold *ryo* = 60 silver *monmes* = 6 copper *kans*

In 1854, Japan opened its doors to foreign countries and the long Tokugawa regime ended in 1867. Four years later the new government adopted a modern decimal coinage system and the gold standard for the yen.

Numerical Notation in Japanese Bookkeeping

In *Accounting Evolution to 1900*, A. C. Littleton lists writing, money and arithmetic as the mechanical elements for the formation of systematic bookkeeping.¹⁵ Writing and arithmetic were, however, soon combined into written arithmetic or a system of numerical notations which were further developed into Arabic numerals and method of computation. This new method, algorizm, using nine numerals and a zero enabled the Medieval Italian merchants to arrange figures in columns, perform subtraction by contraposition and reduce their bookkeeping procedure to a sequence of simple computations.

In Japan, however, the process of account keeping was separated into two phases, (1) making a record in the book with a writing brush and (2) computation on the abacus ("*soroban*"). In the Japanese notation numbers are expressed in writing by nine characters denoting one to nine and, in the place of the zero, some more characters respectively denoting ten, hundred, thousand, ten-thousand, hundred-million, and so on. Numbers are written as they are read. To write 1976, for example, the characters representing thousand, hundred and ten are placed between the characters denoting 1, 9, 7 and 6. In traditional account books numerals are written vertically in cursive style probably to speed writing and also as a precaution against fraudulent changes.

The numerical notation was the most troublesome problem for Fukuzawa and other early authors in introducing Western bookkeeping, as the Arabic figures were completely unknown in those days in Japan. In early 1871, the government erected a mint in Osaka and adopted the English system of bookkeeping. The chief accountant Vicente E. Braga (1840-1911), a Portuguese, kept all books in English, subsequently they were translated into Japanese, using horizontal notation of the Japanese figures for the first one and one half years and Arabic figures thereafter. In the year 1876, the government adopted Arabic figures for the entire official system of bookkeeping of Japan. The following list shows the form of numerical notations found in the earliest accounting texts printed in Japan;

Bibliography	Foreign Model	Numerical Notation	
		Horizontal	Vertical
1. Tametsugu Mishima; ZOHEI BOKINOHO (MS)	None	Japanese	
2. Yukichi Fukuzawa; CHOAINOHO, 1873-4	Bryant & Stratton; Common School Book-keeping		Japanese
3. Nakaba Kato; ¹⁶ SHOKA HITSUYO, 1873-77	William Inglis; Book-keeping by Single & Double Entry		Japanese
4. Finance Ministry; GINKO BOKISEIHO, 1873	Alexander Allan Shand; Bank Book-keeping (MS)	Japanese	
5. Norihide Kobayashi; MARUSUCHI KIBOHO, 1875	C. C. Marsh; A Course of Practice in Single Entry Book-keeping		Japanese
6. Norihide Kobayashi; MARUSUSHI FUKUSHIKI KIBOHO, 1876	C. C. Marsh; The Science of Double Entry Book-keeping		Japanese
7. Ryuichi Kurihara; ¹⁷ KIBOHO HITORIMANABI, 1876	None		Japanese
8. Anonymous; SHOYO BOKIHO SHOHO, 1877	S. S. Packard; Manual of Theoretical Training in the Science of Accounts	Arabic	
9. Hidejiro Usagawa; ¹⁸ NICHIOYO BOKIHO, 1878	Charles Hutton; A Complete Treatise on Practical Book-keeping	Arabic	
10. Shutaro Morishima; BOKIGAKU REIDAI, 1878	E. G. Folsom; Logic of Accounts		Japanese
11. Shutaro Morishima & Iwakusu Morishita; BOKIGAKU KAITEI, 1878	Bryant & Stratton; Counting House Book-keeping		Japanese

Nearly all of the above named authors were of the intellectual samurai class. Fukuzawa (1835-1901) was the founder of *Keio-gijuku*, the precursor of the Keio University. Six authors of the above mentioned works had received their training from Fukuzawa. He introduced the vertical decimal notation of Japanese figures in his *Choainoho*. *Ginko Bokiseiho* (Bank Bookkeeping) was written by a Scotsman, Alexander Allan Shand (1844-1930), secretary of the Currency Bureau, the Finance Ministry, and was published by the Ministry. The Department of Education published a translation of C. C. Marsh's *Book-keeping By Single and Double Entry* as a text book for Japanese schools. *Shoyo Bokiho Shoho*, a reprint of S. S. Packard's text was also used by William C. Whitney (1825-1882), the first teacher from America at Shoho Koshujo, (later

Hitotsubashi University). The Osaka Mint, the Currency Bureau of the Department of Finance and the Department of Education and two schools, Keio-gijuku and Shoho Koshujo were the main gateways through which Western bookkeeping was imported into Japan. The above listed bookkeeping texts may be recapitulated by those entrances as follows;

<i>Gateways</i>	<i>Teachers</i>	<i>British Bookkeeping</i>	<i>American Bookkeeping</i>
Osaka Mint	Vicente E. Braga	1.	
Currency Bureau	Alexander Allan Shand	4, 9.	
Department of Education	Marion M. Scott		5, 6, 7.
Keio-gijuku	Yukichi Fukuzawa		2, 11.
Shoho Koshujo	William C. Whitney		8, 10.

Unique Contributions of Japanese Authors

Mint Bookkeeping, a Double Entry Bookkeeping in Kind.

As noted earlier, Braga introduced the English method of mint bookkeeping which consists of voucher—waste journal—journal—general ledger—daily balance—profit & loss account and balance sheet. There were three complete sets of books and separate accounts maintained for quantities (ounces) of gold, silver and copper. In early 1873, Tametsugu Mishima (1837-1880), Japanese accountant under Braga, wrote *Zohei Bokinoho* (Mint Bookkeeping), a manuscript originally in four volumes of which two volumes are not extant. Here he set forth in sufficient details and exactness what he had learned from Braga. He explained the actual procedures of mint bookkeeping based on the transactions of gold for two months ending February 28, 1873. It may not be too much to say that this is the only treatise known in the academic circles of the world on double entry maintained in kind instead of in terms of monetary value. Here is a specimen of calculation of a shipment of gold bullion received for coining;¹⁹

	<i>Received Bullion</i>	<i>Standard Gold</i>	<i>Remarks</i>
Bullion received	734.45 oz	oz	Standard fineness, 900
Assayed fineness, 995.2	733.80	811.41	$733.80 \times 995.2 \div 900$
Gold sweep	.22	.22	
Assaying pieces	.08	.08	
Melting loss	.35		
Total	734.45	811.71	

	<i>Received Bullion</i>	<i>Standard Gold</i>	<i>Remarks</i>
Premelting Fees, 1/1000		.81	
Seignorage, 1/100		8.11	
<hr/>			
Standard gold to be returned		802.79 oz	1 oz -480 gr. 1.00-25.72 gr.
Equivalent in gold coins		14,982.08	802.79 × 480 ÷ 25.72

The Earliest Printed Book on the History of Bookkeeping

Japan in adopting the double entry system, was a leader in the field of the history of accounting. In the year 1886, Rikitaro Unno (1861-1944) published *Bokigaku Kigenko* (Origin of Bookkeeping). It is a small pamphlet, 12.5 x 18.2 cm in size, 39 pages, but it is one of the earliest printed works on bookkeeping history in the world. The author learned bookkeeping at Mitsubishi Shogyo Gakko (Mitsubishi Commercial School), where the aforesaid Morishita was principal and Morishima, the teacher, and their works, *Bokigaku Kaitei* and *Bokigaku Reidai*, were the text-books. After graduation in 1881, he entered Nihon Railway Company and as a hobby, published a few books including this one.²⁰

At first he intended to compile a history in English and gathered material from books of reference. His bibliography contains nineteen books, including six treatises on bookkeeping, three on mathematics, two history books and eight dictionaries and encyclopedias. There is an interesting confusion about the author of the first printed work on double entry who was called Lucas de Burgo or Lucas Pacioli in one place and Brother Luke in another place.²¹ The following is the most noteworthy passage in this book;²²

“As Anderson²³ tells us, double entry seems to have been deduced from the principles of numerical algebra. Relations between gain and loss and stock, and functions of debit and credit are all proved clearly by using equations and algebraic symbolizations, as shown below;

Let S = the net stock at opening the books.

p = the gain and loss at closing the books.

D = the Dr. side of the balance account.

C = the Cr. side of the balance account.

Then $S \pm p = N$ = the net stock at closing the books.

and $D - C = N$ = the net stock at closing the books.

Hence (per Ax. 1. Euclid) $D - C = N$ and therefore $D = N + C$ which was to be proved; that is, the Dr. side of the balance account should equal the Cr. side, added to the net stock. Hence the proof of book-keeping may be considered as consisting of two methods of ascertaining my property and these must always agree if the work be right."²⁴

I have just found the source of this important passage in Abraham Rees's cyclopedia. It is noteworthy that this suggestion appeared earlier in Japan than a similar idea of Friedrich Hugli in Europe.²⁵

This is not the end of the story. It can be easily seen that to assimilate foreign techniques and practices quite different from the indigenous ones would meet with difficulties. It will take time for the Western System of bookkeeping to be thoroughly understood and adapted to the environment before it takes firm root in Japan.

FOOTNOTES

¹Caron, p. 57.

²Nishikawa, *The Early History*, pp. 380, 381.

³Ogura, "The Nakal Family's Bookkeeping Method" pp. 123-129.

⁴Woolf, p. 111.

⁵Nishikawa, working paper #10.

⁶Most certainly a type of statement of changes in financial position.

⁷Sprague, p. 31.

⁸Fukuzawa, pp. 6-7, pp. 9-10.

⁹Marsh, p. 9.

¹⁰Finance Ministry, pp. 5-7.

¹¹Nishikawa, "*Origin of Cash Method Bookkeeping in Japan*".

¹²American Accounting Association, p. 54.

¹³Ogura, *Goshu Nakaiké Choainoho*, p. 50.

¹⁴The gold *bu* and the silver *bu* are different monetary units.

¹⁵Littleton, pp. 13-14.

¹⁶Nakaba Kato (1844-1914) was introduced to Western culture by a teacher of the feudal clan and became an official of the Department of Industry of the Meiji government. This book was published by his own effort and therefore cannot be assigned to any gateway.

¹⁷Kurihara, a normal school teacher, wrote this book as a textbook. This is the first book written by a Japanese without a direct foreign model.

¹⁸Hidejiro Usagawa (1849-1881) was a graduate of Fukuzawa's school and a member of the group of five officials in charge of translation of Shand's *Bank Book-keeping*. *Nichiyō-Bokihō* is the first Japanese text having adopted Arabic numerals. He suggested omitting the prefix "To & By" to the debit and credit entries for the sake of simplicity.

¹⁹Mishima, pp. 6-7.

²⁰Nishikawa, "An Essay on Rikitaro Unno's Bokigaku Kigenko — Origin of Book-keeping, 1886", pp. 1-8.

²¹Unno, pp. 12-13.

²²Unno, pp. 8-11.

²³Adam Anderson published a four-volume history of commerce in the late 18th century in London, *Historical & Chronological Deduction of the Origin of Commerce*, Vol. 1, p. 408.

²⁴Rees, *The Cyclopaedia*.

²⁵Koima, pp. 196-209.

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DEVELOPMENT OF AN ACCOUNTING SYSTEM IN ANCIENT ATHENS IN RESPONSE TO SOCIO-ECONOMIC CHANGES*

The development of accounting principles and the evolution of accounting systems are highly dependent on the socio-economic environment. Although the socio-economic environment of the Golden Age of Greece (5th to 4th Century B.C.), known as the classical period, has received the attention of many scholars, very little has been written about early Greek accounting. The purpose of the present study is to demonstrate that the socio-economic activity which took place in the environment of the Golden Age of Greece (largely centered around Athens) created needs that required the development of an improved accounting system and other financial controls. An attempt has been made (a) to explain the development of an accounting system in the government sector of the Athenian state and (b) to trace the evolution of the system in response to socio-economic needs.

Socio-Economic Developments

In early Athens men were organized into small communities, known as *polis*. Within these groups they found themselves competing for limited economic resources. Natural self-interest and the struggle for survival put social forces into action which created socio-economic inequalities. The strong and sometimes conflicting desires for political power, civic rights, economic power, and wealth created a social class system. Political and economic power was concentrated in the hands of the few, and the powerless masses were mistreated. The aristocrats used their economic power to rule the proletariat who as a result, sought reforms that would offer protection against socio-economic injustice. However, the solving of these problems created a new environment from which new

*Based upon a paper delivered at the Second World Congress of Accounting Historians.

problems emerged. The interacting forces of social reforms such as the redistribution of wealth and the expansion of civic rights made the socio-economic evolution persistent and dynamic. Thus, the environment of Athens before the Golden Age was characterized by an autocratic form of government and a continuous struggle among the social classes for political and economic justice. State and temple resources were either non-existent or very limited due to the limited role of government.

During the Golden Age a new environment was created by some unusual political, social, and economic events. First, the citizens of Athens demanded and achieved a democratic form of government with political and economic justice guaranteed by a constitution. Second, the discovery of silver mines at Laurium created expanded wealth for individuals and provided the government with new revenues to meet defense and other social needs. Third, the development and use of the Athenian currency facilitated financial transactions. In addition, the basic requisites of accounting were present in the Athenian environment. The art of writing and the development of arithmetic and other means of computation, including the adoption of weights and other measurements, facilitated the recording of financial transactions. Finally, the Persian and Peloponnesian Wars created additional needs for revenues for defense purposes and for the care of the population which was now concentrated in the city. The Confederacy of Delos, which contributed so much to the establishment of the Athenian Empire, was an outgrowth of the Persian Wars.

These developments created increasing social needs that had to be met in a responsible manner. Responsibility was assumed by the central government through an increased role in the areas of defense, education, religious needs, and public welfare. The satisfaction of these needs and the continuous accumulation of wealth in the state treasuries created problems in financial administration which could only be solved by the development of a strong state financial system. Effective management of state revenues and expenditures would have been impossible, however, without an accounting system which could be used (a) to control state resources, (b) to establish accountability, and (c) to report the results of operations to the people. For the first time in Greek history an integrated accounting system emerged in the Athenian State as a response to the various needs created by the environment. The elements of this system included (a) an accounting entity in which state financial transactions could be recorded and controlled, (b)

budgets to plan and control the activities of this entity, (c) accounting records showing the execution of such plans, and (d) audits for the verification of results and establishment of accountability. These elements were coordinated and directed towards helping government perform its function in the areas of defense, religion, and public welfare.

The Accounting Entity

The Treasury of Athena of the period 454-407 B.C. is selected as the accounting entity in which the development of the system will be traced. This entity is chosen for two reasons: (a) the use of the temple of Athena as the central treasury by the State of Athens, and (b) the high volume of financial transactions recorded by the Treasury. The latter can be explained by the development of a centralized financial system and the fusion of the state and temple resources into one common (general) fund.

Before the fifth century the function of Greek temples was limited to religious activities at a local level. Thus, the size and scope of their resources were limited. However, in the year 454 B.C., by agreement between Athens and her allies, all funds (5,000 talents) accumulated in the Temple of Apollo were transferred from Delos to the Acropolis where state monies and confederate funds formed a common state fund. These funds could be used as required after approval of the Athenian people and the Council. Under the terms of the agreement, Athens assumed responsibility to rebuild the destroyed temples and provide the necessary protection against any enemy attack. Athens agreed to play a dominant role in providing for the welfare of Greece in exchange for contributions from the allies.

With a later financial reorganization of the state in 449 B.C., the state common funds were diverted into the Temple of Athena and merged with the sacred temple funds, forming a general reserve fund. A centralized system of collections and disbursements was established. This system required that all financial transactions be recorded in the books of the Treasurers of Athena. Thus, the Temple of Athena became a central bank and state treasury. The volume and complexity of the financial transactions of this fund increased continuously with the growth of the state.

Inscriptions and other authoritative sources indicate that all state financial transactions did pass through the books of the Treasurers of Athena. For example, the second decree of Callias required that

"the Hellenotamiae shall deposit with the Treasurers of Athena on the Acropolis all revenues collected during the year."¹ In addition, in the record of expenditures of the Treasurers of Athena in 410-409 B.C. are found three financial transactions in which the Treasurers charged the state for monies collected from the allies (i.e., from Samos) and used directly in the field by the Hellenotamiae.² Current scholars agree that the Hellenotamiae did not keep a separate chest, but instead deposited all their collections on the Acropolis and received back what was needed to finance the Empire.³

The purpose of developing this centralized system of collections and disbursements was to secure better control in the management of state financial resources as their size and scope increased with the growth of the Empire. Waste of funds which might have resulted from collecting and using them locally was avoided. But the most important aspect of this development was the accumulation of financial reserves that could become available immediately to the state in the event of crisis. Public debt financing was unknown in those days and extraordinary expenditures for wars and public works had to be financed from past "savings" of the government. Thus, the Treasury of Athena was used as a kind of central bank to handle and preserve all public funds under the control of the state. Surplus state operating funds could be used for temple purposes and temple funds were used to cover deficits of state operating funds. This structure can be better understood if the function of the treasury and its main cash flows are first explained.

All regular state revenues (most restricted or earmarked) from tributes and other sources flowed into the Treasury of Athena, i.e.; the state treasury, and were allocated to the various operating fund accounts of the goddess Athena. Payments were made from the operating fund accounts to cover current operating expenses (specified by the revenue budget), and any surplus or deficit was transferred to or covered from the Temple fund accounts. This explains how an operating fund could be in a surplus or deficit position during the year. Thus, state funds were combined with Temple funds, and after all expenditures had been paid, the balance left in the Temple fund accounts represented the amount of the state equity. These Temple fund accounts formed the general (also called "iron") reserve fund. This general reserve fund was to cover extraordinary government needs in the areas of defense, religion, and public welfare and measured the financial strength of the state. In the days of Pericles it amounted to about 6,000 talents, excluding the sacred treasures that could very easily be converted into money.⁴ The

total private property of the Athenian citizens and resident aliens at that time amounted to only 5,750 talents,⁵ so the amount of 6,000 talents was a significant proportion of the total wealth of Athens. Themistocles decided not to distribute the state surpluses to the people, but instead to accumulate them in the general reserve fund for future needs of the State. Precautionary requirements (budget authorization or vote of the people) were established to prevent possible misuse of this reserve fund.

In addition to the reserve fund there were operating fund accounts for revenues collected for the normal operating costs of the state and extraordinary revenues to cover war expenditures. These revenues were restricted or earmarked for specific purposes by the use of individualized budgets, as evidenced by the following examples:⁶

1. revenues from tributes were devoted to military expenses and other operating costs of the Confederacy.
2. revenues from mines were earmarked for building ships and welfare.
3. revenues from law courts were devoted to payment of *dikasts* (judges).
4. revenues from direct taxes were earmarked for payment of *agoranomoi* (market inspectors).
5. revenues from liturgies were reserved for public ceremonies.
6. revenues from indirect taxes were devoted to administrative expenses.
7. revenues from *cleruchies* (special contributions imposed on certain citizens by the state) were earmarked for administrative costs.
8. extraordinary revenues were sometimes raised to cover urgent war expenditures.

The Temple fund accounts were increased (a) by the transfer of surpluses from operating fund accounts, as indicated above, (b) by a quota (1/60) paid to the goddess Athena on tributes collected from the allies, (c) by special state grants, such as the original deposit of the 5,000 talents transferred from Delos, and an additional 200 talents per year for 15 years (448-434 B.C.) from tributes, over and above the quota,⁷ (d) by proceeds from confiscated property and booty and (e) by private donations in the form of cash or treasures. Decreases in the reserve fund resulted from covering deficits in the operating fund accounts, and extraordinary expendi-

tures in the areas of public works, religious festivals, military operations, and other unforeseen events. Revenues and expenditures were recorded in these accounts and the surplus or deficit was closed to the Temple fund accounts, i.e., the general reserve fund. The balance in these accounts at a given time represented the size of the general reserve fund, expressed in the form of cash and inventories of sacred treasures. A balance sheet for the treasury at any time would look as follows:

<i>Temple Assets</i>		<i>Liabilities and Equity</i>	
Cash	XX	Operating Fund Accounts of Normal Revenues	XX
Loans Receivable	XX	Temple fund Accounts of the General Reserve	XX
Inventories of Treasures	<u>XX</u>		
Total	<u>XXX</u>	Total	<u>XXX</u>

“Loans Receivable” represented claims of the treasury against the state for temporary “loans” to the state. On the liability side, the operating fund accounts usually had open balances because the individual operating accounts were closed to the general reserve only when the projects or purposes had been accomplished and not at specified time intervals.

Budgeting for Planning and Control

The primary purpose of any accounting system is to provide control in the proper management of financial resources. Accounting controls are attained by developing plans for future action (budgets), maintaining records of actual performance and comparing the results. They are supplemented by administrative and other operating procedures. For a given entity, the total budget should show the over-all financial plan of the entity. Total revenue is allocated to meet various needs according to assumed priorities. Such a system requires a formal expenditures budget for the appropriation of the total revenues to the assumed needs. This is the modern concept of the comprehensive budget but it was unknown during the Golden Age of Greece. A budget system, however, was in use.

The Athenians developed individualized budgets, giving them the name of "encyclic administration." Under this type of budget, the assembly of the people voted definite amounts for definite objectives and at the same time regulated the terms of their disposition.⁸ Thus the individualized budgets constituted joint revenue and expenditure budgets in the sense that all normal revenues were restricted when raised, and the amounts to be raised were determined by prior authorization of the citizens. So the Athenians used several budgets (treasuries) and within each budget the citizens voted upon certain categories of expenditures and revenues were collected and allocated accordingly. The law which specified the use that was to be made of the revenues was called a "regulation." These "regulations" established special funds which remained in existence until the project was completed or as long as that specific public needs had to be met.

The use of individualized budgets seemed to have been preferable because the people wanted to know that the taxes paid were used for intended purposes. The assignment of special revenues to fixed expenses was regarded as essential to the correct administration of funds. This system also facilitated the execution of independent audits.

Special purpose projects were controlled by this method but whether the Athenians used budgets to plan and control activities in the normal operations of the state cannot be established from the available inscriptions. However, there is considerable evidence to the affirmative. For instance, according to Aristotle's *Constitution of Athens* (Ch. 47.3), the vendors, one from each tribe elected by lot, "draw up ten separate lists of those who have to pay in each presidency, and separate lists of those who have to pay three times in the year." This represents an assessment of taxes made in advance, i.e., a budgetary plan of collecting taxes and other state revenues from mines and farming out of all public contracts.⁹

In the area of extraordinary revenues and expenditures, i.e., assessment of tributes to be paid by the allies and appropriations for public works, there is direct evidence of the use of budgetary controls. Exhibit 1 contained in the appendix, an English translation of the assessment of the Athenian Allies for the years 423-425 B.C., is a revenue budget together with full information about the assessment procedures and details concerning their implementation. Exhibit 2 is the budget authorization for construction and repairs of the Parthenon and Propylaea as passed by the council in 434 B.C.

In addition to these budgetary appropriations for expenditures, which could be predicted and therefore planned in advance, the Athenians required specific authorization by the citizens for extraordinary and unpredictable expenditures, such as those for wars. The purpose of these additional controls was to prevent any misuse of the resources of the general reserve fund. Well established procedures were followed in the preparation and execution of these budgets.

Accounting Records of Execution of Budget Plans

Accounting records were maintained for the execution of plans for specific government functions and constituted the basis for the verification of results in the performance of these functions. These accounting records of execution were used to control and establish accountability (a) for collecting budgeted revenues from tributes and other sources, and (b) for payment of expenditures for normal operations of the state, construction of public works, festivals, wars, and other public needs. Collection of revenues and payment of expenditures were authorized by the people through individualized budgets, assessment plans, or specific appropriations and authorizations for extraordinary expenditures as explained above. A close integration existed between the procedures established to record and control the activities connected with the Temple of Athena.

Exhibit 3 in the appendix is a report of the collection of the tribute quotas for the year 425 B.C. As a matter of interest, a table (exhibit 4) has been prepared comparing the actual collections for the year 425 B.C. with the assessments for that year. These relationships demonstrate the existing integration of the elements of the system. Exhibit 5 is a report of actual amounts received by the commissioners for the budgeted construction of the Parthenon and an accounting for the expenditures and year ending balance of funds in their hands.

The Verification Process and Reporting

Accountability and control of state revenues and expenditures was also achieved through the verification process by the three boards of state accountants, based on the accounting records of execution and the related budgetary and other documents. More specifically, the purpose of this process was (a) to strengthen the integrity of the accounting system by providing additional controls

in the management of state resources, (b) to establish accountability against any public officials in charge of public funds, and (c) to provide dependable reports to the people and to Athens' allies on the management of these funds.

The first board of Council Accountants dealt with the keeping of accounts of public officials and with internal audit. The second board of Administration Accountants executed an independent audit and presented the results to the jury-court for public hearing. After this hearing, the auditors reported the findings to the public by engraving in marble some of the accounts and exhibiting them on the Acropolis. Through this requirement for audit and public reporting, every citizen was informed of the management of public funds. The third board of Examiners dealt with cases in which a public official was accused, after he had rendered his accounts to the Administration Accountants and had appeared in the jury-courts. In the State of Athens no one who was in charge of public funds either directly or indirectly was exempted from such verification.

Summary

Government functions and the related public needs in Athens changed over time as required by changes in the socio-economic environment. These changes brought about the development of an evolving accounting system. A series of major socio-economic changes occurred in Athens during 454 to 407 B.C. As democracy, as a form of government, developed further the government's role in satisfying public needs increased and new revenues were needed to meet the required expenditures. For proper control of public funds and establishment of accountability against public officials, the constitution required the keeping of records of normal revenues and the apportionment of these revenues to the various magistrates to meet specific expenditures. It also required that the management of public funds be subject to verification by state auditors.

The Persian Wars which led to the formation of the Confederacy of Delos also had an important influence on the accounting practices of the Greek States. Additional revenues were needed from tributes to meet the required expenditures for defense. As a result, accounting records of collections and expenditures were needed to record and control these financial transactions. The agreement for the transfer to Athens of the Delian funds resulted in the Athenian assessments of tributes and the related budgetary appropriations. Records of execution were required for expenditures for defense

and for the construction of public works and festivals. Similarly, the Peloponnesian Wars required an increase in government spending. The increasing scope of state financial activity required the development of a more sophisticated accounting system and more efficient administrative procedures for better control of the state financial resources. The need of Athens to keep the other members of the Confederacy informed led to the development of improved reporting of both revenues and expenditures. Creditability was added to these statements by internal and independent audits of the statements by three boards of state accountants created for that purpose.

The emergence of an integrated accounting system and highly developed administrative controls in the Athenian state of the Golden Age occurred as a natural response to these socio-economic needs created by the environment.

FOOTNOTES

- ¹Tod, pp. 104-106.
- ²Tod, pp. 202-204.
- ³Meritt, p. 365.
- ⁴Meritt, p. 338. For more details on the evolution of the iron reserve fund see pp. 326-358.
- ⁵Ferguson, p. 166.
- ⁶Andreades, pp. 268-368.
- ⁷Meritt, p. 328.
- ⁸Andreades, p. 366.
- ⁹Rackham, p. 131.

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APPENDIX

Financial Records of the Athenian State Related to The Golden Age of Greece

EXHIBIT 1

ASSESSMENT OF TRIBUTE TO BE PAID BY THE ATHENIAN ALLIES FOR THE PERIOD 425-423 B.C. (Partial Translation)

Gods—Assessment of Tribute

(FIRST DECREE)

Resolved by the Council and Demos, while Leontis was the tribe in prytany, (. . .) on was secretary, and (. . .) was the presiding officer. Thoudippos made the motion:

A. *The Current Assessment* (lines 4-26)

1. The Demos shall send heralds to be elected by the Council from those who receive pay, to the cities, two to Ionia and Karia, two to Thrace, two to the Islands, and two to the Hellespont. These shall announce in the commune of each city that representatives are to come (to Athens) in the month of Maimakterion.

2. The Demos shall elect by lot 30 *eisagogeis*. These are to choose a secretary and an assistant secretary from the entire citizen body.

3. The Council shall select ten men (*taktai*) to assess the tribute. These shall enroll the cities within five days of the time they are selected and swear their oaths, or for each day of them shall pay a fine of 1,000 drachmai.

4. The administrators of the oath shall swear in the *taktai* on the very day of their selection, or each administrator shall be subject to the same fine.

5. The *eisagogeis* shall care for the adjudications concerning the tribute according as the Demos may vote. They and the archon and the polemarch shall hold preliminary interrogations of the cases in the *Heliaia* (building), as is done with the other cases, namely, those which came before the *heliasts*.

6. If the taktai do not assess tribute on the cities according to the adjudications, each of them shall be subject at his *euthyna* according to the law to a fine of 10,000 drachmai.

7. The *nomothetai* shall establish a new court of one thousand jurors. Since the tribute has become too small, they (the jurors) shall join with the Council in making the current assessments, just as in the last administrative period, all in due proportion during the month of Posideion. They shall also deliberate daily from the first of the month in accordance with the same procedure in order that the tribute may be assessed in the month of Posideion.

8. The Council shall deliberate in full session and continuously in order that the assessments may be effected, unless the Demos votes otherwise. They shall not now assess a smaller amount of tribute on any city than it has been paying previously, unless because of impoverishment of the country there is a manifest lack of ability to pay more.

9. This recommendation of the Council and this decree, together with the amount of tribute assessed on each city, shall be inscribed by the secretary of the Council on two *stelai* of stone, one of which he shall erect in the *Bouleuterion*, the other on the *Akropolis*. The *poletai* shall let the contract, the *kolakretai* shall provide the funds.

B. Future Assessments (lines 26-33)

1. In the future, announcements concerning the tribute shall be made to the cities before the Great Panathenaia.

2. The prytany which happens to be in office shall introduce the business of assessments at the time of the Panathenaia. If the prytaneis do not then introduce this to the Demos and if they do not vote a court concerning the tribute and if they do not deliberate in their own term of office, each one of the prytaneis shall be subject to a fine of 100 drachmai to be consecrated to Athena Nike and 100 to be paid to the public treasury, and each one shall be subject at his *euthyna* to a fine of 1,000 drachmai; and if anyone else introduces a motion that the cities shall not be assessed at the time of the Great Panathenaia in the time of the prytany which holds office first in the year, he shall be deprived of civic rights and his property shall be confiscated and a *tenth* given to the goddess.

C. Provision for Action (lines 33-38)

1. These proposals shall of necessity be brought before the Demos by the prytany of Oineis as the first item on the agenda after

the religious business on the second day after the expedition returns.

2. If the business is not finished on this day there shall be continuous deliberations about it beginning immediately on the following day until it is finished within the time of the prytany named.

3. If the prytaneis do not bring the matter before the Demos or do not complete the business during their own term of office, each one of them shall be subject at his euthyna to a fine of 10,000 drachmai on the ground of preventing the contribution of *phoros* to military expeditions.

D. Details of Assessment Procedure (lines 38-51)

1. The heralds who are summoned are to be brought by the public summoners, in order that the Council may judge them if they do not seem to be performing their duties correctly. As for the routes of the heralds who are to travel, the taktai are to prescribe these, indicating how far they shall proceed, in order that they may not journey uninstructed. The heralds shall be compelled to announce the making of the assessments to the cities wherever the (local) archontes shall deem it best. The Demos shall vote on what must be said to the cities about the assessments and the decree, and on any other matter of urgency which the prytaneis may introduce.

2. As soon as the Council effects the assessment of the tribute, the generals shall see to it that the cities pay the tribute, in order that the Demos may have sufficient money for the war.

3. The generals shall give consideration to matters of tribute, each year, after investigating first, on land and sea, how much must be spent for military expeditions or for any other purpose. They shall regularly introduce suits which concern this subject at the first session of the Council without consulting the Heliiaia and the other courts, unless the Demos votes that they shall introduce them after the *dikastai* have first made decision.

4. The kolakretai shall provide the pay for the heralds to travel.

(RIDER)

(. . . .) moved:

1. That the resolution of the Council be adopted with the following amendment: those assessments which may be determined for individual cities after appeal shall be laid by the prytaneis who then happen to be in office and by the secretary of the Council before the court when it deals with the assessments, in order that the *dikastai* may give their concurrence.

(SECOND DECREE)

Resolved by the Council and Demos, while Aigeis was the tribe in prytany, Philippos was secretary and (. . .) oros was presiding officer. Thoudippos made the motion:

1. All those cities assessed tribute in the year of the Council for which Pleistias was first secretary, in the archonship of Stratokles, shall bring to the Great Panathenaia a cow and a panoply of armour.

2. They shall take part in the festival procession in the same manner as colonists.

(THE RECORD OF ASSESSMENT)

Tribute was assessed upon the cities as follows by the Council for which Pleistias (. . .) was first secretary, in the archonship of Stratokles, in the term of office of the eisagogeis for whom Ka (. . .) (. . .) was secretary:

A. *Tribute from Islands*

30 talents	Parioi
15 "	Naxioi
15 "	Andrioi
9 "	Siphnioi

(The record continues with some more names of cities and then a sub-total of 163 talents, 410 drachmas and 3 obols from this tax district is drawn.)

B. *Ionian Tribute*

. . . talents	Pediois from Lindou
1/3 "	Halkiatae
10 "	Kavnioi
. . . "	Erythraioi

(The record continues with some more names of cities and then a sub-total of tribute from this district is drawn.)

C. *Hellespontine Tribute*

. . talents	Byzantioi
. . "	Lamfsakenoi
. . "	Perinthioi
. . "	Selymbrianoi
. . "	Tenedioi
20 "	Kyzecene

(The record continues with some more names of cities and then a sub-total of tribute from this district is drawn.)

D. Tribute on Seashore Cities

(Similar pattern is followed for this district.)

E. Thracian Tribute

75 talents	Avderitae
60 "	Thassioi
21 "	Maronitae
15 "	Samothrakes
15 "	Toronaioi
. . "	Skionaioi
. . "	Neopolitae
. . "	Peparithioi
. . "	Akanthioi
. . "	Aeniatae
. . "	Argillioi

(The record continues with some more cities and then a sub-total of 310 talents and . . . drachmas from this tax district is drawn.)

F. Tribute from Pontos

(Similar pattern in listing the cities and the amounts if followed for this district also. Then, at the end of the record the sub-totals of the six tax districts are added and a grand total of 1,460 talents assessed for the period 425-423 B.C. is drawn.)

Source: Meritt, et al., pp. 40-43.

Notes: 1. The exhibits included in the present study represent partial translations made by the author from the original records that are found in the sources cited.

2. According to the Athenian currency system, one talent included 60 minas, one mina 100 drachmas, and one drachma 6 obols.

EXHIBIT 2

**BUDGET AUTHORIZATION FOR THE CONSTRUCTION
OF THE PARTHENON AND PROPYLAEA
Second Decree of Callias Passed in 434 B.C.
(Partial Translation)**

“It was decided by the Council and the people. When Cecropes served as a prytanes, Mnesitheos as a secretary and Eupithes as a Supervisor, Callias moved:

Pedestals made of stone, golden emblems of victories, and the Propylaea should be constructed, repairs should be made starting from the Southern part of the Acropolis, as authorized, and ten talents (i.e., 60,000 drachmae) per year should be spent from Athena's funds, until the buildings have been constructed and repaired.

The Treasurers of Athena being responsible for these works, shall order the architect to prepare plans for the other buildings like those of the Propylaea. The architect along with the commissioners on public works shall supervise the works so that the Acropolis is decorated in the most excellent and splendid way and the works are completed." (lines 1-12)

Source: Tod, pp. 104-106.

EXHIBIT 3
COLLECTION OF QUOTA OF TRIBUTE
PAID TO GODDESS ATHENA
FOR THE YEAR 425 B.C.
(Partial Translation)

In the third archonship of which was secretary, the Hellenotamiae were (the names of the Hellenotamiae are listed in the official order of their tribes).

A. *Ionian Cities*

Pediois from Lindou	. . .	drachmas
Kavnioi	. . .	"
Halkiatae	. . .	"
Erythraioi	. . .	"

B. *Thracian Cities*

Avderitae	1,000	drachmas
Thassioi	3,000	"
Maronitae	300	"
Samothrakes	200	"
Toronaioi	1,200	"
Skionaioi	900	"
Neopolitae	50	"
Peparithioi	300	"
Akanthioi	300	"
Aeniatae	16	" and 4 obols
Argillioi	16	" and 4 obols

C. Hellespontine Cities

Byzantioi	2,157	drachmas
Lamfsakenoi	1,045	"
Perinthioi	1,000	"
Selymbrianoi	900	"
Tenedioi	285	" and 3 obols
Kyzecene	858	" and 2 obols

D. Island Cities

(The names of the cities and the amounts are entirely lost.)

Source: Hicks, pp. 80-81.

EXHIBIT 4
COMPARISON OF ASSESSMENT
AND COLLECTION OF QUOTA OF TRIBUTE
FOR THE YEAR 425 B.C.

<i>Allied Cities of the Athenian State</i>	<i>Total Tribute Assessed</i>	<i>Athena's Quota of Tribute</i>		
		<i>Budgeted Amount (1/60)</i>	<i>Collected Amount</i>	<i>in Arrears (Balance)</i>
A. Thracian Cities				
Avderitae	450,000	7,500	1,000	6,500
Thassioi	360,000	6,000	3,000	3,000
Maronitae	126,000	2,100	300	1,800
Samothrakas	90,000	1,500	200	1,300
Toronaioi	90,000	1,500	1,200	300
Skionaioi	missing	missing	900	missing
Neopolitae	"	"	50	"
Peparithioi	"	"	300	"
Akanthioi	"	"	300	"
Aeniatae	"	"	16+	"
Argilioi	"	"	16+	"
B. Hellespontine Cities				
Kyzecene	120,000	2,000	858+	1,142
Byzantioi	missing	missing	2,157	missing
Lamfsakenoi	"	"	1,045	"
Perinthioi	"	"	1,000	"
Selymbrianoi	"	"	900	"
Tenedioi	"	"	285+	"
C. Ionian Cities				
Halkiatae	2,000	37	missing	missing
Kavnioi	60,000	1,000	"	"
Erythraioi	missing	missing	"	"
Pediois from Lindou	"	"	"	"

Sources: (1) Total tribute assessed in drachmas as indicated in exhibit 1.

(2) Quota of tribute collected in drachmas as indicated in exhibit 3.

EXHIBIT 5
EXPENDITURES FOR THE CONSTRUCTION
OF THE PARTHENON
FOR THE YEAR 434 B.C.
(Partial Translation)

A. *Amounts Received*

The following amounts were received by the commissioners on public works during the year when Anticles was their secretary, on the fourteenth Council when Metagenes was first secretary and Kratetos was archon of the Athenians:

1. Balance from the previous year, 1,470 drachmas, 70 Lampsacene and 27-1/6 Cyzicene golden staters. (lines 1-16)
2. From the treasurers of Athena of whom Labreus was secretary, 25,000 drachmas. (lines 17-20)
3. From sale of gold, having weight of 98 drachmas, 1,372 drachmas. (lines 21-23)
4. From sale of ivory, having weight of 20 talents and 60 drachmas, 1,305 drachmas and 4 obols. (lines 24-26)

B. *Amounts Spent*

1. For rentals, . . . drachmas. (line 30)
2. Wages to workers who quarried and loaded marble at Pentelicus, 2,226 drachmas and 2 obols. (lines 31-33)
3. Paid to statuaries on pediment-sculptures, 16,200 drachmas. (line 34)
4. Salaries to staff members, 192 drachmas. (lines 35-36)
5. Other construction costs, 1,800 drachmas. (line 37)

C. *Amounts Left at the End of the Year*

1. 70 Lampsacene and 27-1/6 Cyzicene golden staters. (lines 40-43)
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Source: Tod, pp. 112-113.

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BUSINESS VENTURES IN GENOA DURING THE TWELFTH CENTURY (1156-1158)

In the Middle Ages, a notary public was asked to record many transactions which today we probably would not consider necessary to authenticate. The books for recording these notarial acts were called *protocolli* or protocols, and the acts were called *imbreviature* or abridged deeds, because they contain only the essential terms of the transaction, although the *incipit*, containing the complex phraseology and wording, was a standardized form.

The oldest known series of these notarial acts is kept in Genoa. Isolated notarial documents or entire collections concerning private or public bodies may be found in great numbers especially in ecclesiastical archives, and they represent an essential source for the study of history in the Middle Ages. Generally these documents deal with particular public or religious organizations or with certain aspects of human activity. These protocols where the notary has recorded, often throughout several years, the most disparate kinds of agreements are an original or sometimes supplemental source to direct historical sources. The possibility of making such analyses depends on the number and continuity of these records. The Ligurian region is richly endowed in having the Genoese notarial records, together with the records of the notaries Cumano and De Donato of Savona, and the cartulary of Johannes di Giona of Portovenere, which constitute the oldest collection now existing. The one hundred and fifty cartularies dated before 1300 are the most valuable. Six of them contain acts drawn during the second half of the twelfth century.¹ By studying them we may obtain a better understanding of the history of commerce and of maritime law of the whole Mediterranean basin.

During those times in Genoa banks did not exist to accumulate capital for loans to merchants who had endless financial demands due to their overseas commerce. These operations were performed exclusively by private citizens and were controlled by various juridical formulas and specified rights and obligations arising from the

risk and other particular modalities of each operation. The contracts of *accomandatio* and *societas* are two examples of these juridical formulas.

In the contract of *accomandatio* he who received the money made the promise to return it at a specified time together with the earnings made by investing it in commercial operations, except one fourth of the profits which he would keep for himself. The contract of *societas* was characterized by the obligation of the person who received a certain amount of money to invest it, in addition to his own capital which had to be equal to one half of the amount received, and to return this money with half of the profits earned in the operation. It is evident that the essential element of both contracts was the amount of money or the stock of merchandise, while the personal relationship was closely related to it, but of secondary importance, as is true nowadays.

The frequent use of the *accomandatio* is quite evident when we examine the cartularies of the twelfth century. Indeed this contract represented the easiest and most convenient way to attract capital into all types of sea-trade ventures. It was a means to overcome with a minimum of difficulty the prohibition established by the church to lend money at interest; for the nobles and clergy it was an easy solution to their reluctance to carry on business personally. The *accomandatio* was also an excellent means for distributing capital and savings to commercial enterprises; functions which are now performed by banks. The suppliers of capital in these ventures were members of rich and noble families and people belonging to every social class: small craftsmen, priests, lawyers, judges and tax contractors. On the other hand, the person who received this money was always a merchant. This term "merchant" is not specifically mentioned in the acts, but we may infer it from the obligation to carry on business, a clause which is included in all acts. Furthermore, the asset which constituted the object of the contract was always indicated. Generally, it was money expressed in Genoese pounds, but sometimes it was merchandise, consigned at a specified price. The object could also be represented by the so-called *loca navis*, or part ownerships, in which a ship could be nominally divided among different persons. Each part or share was bought, sold, or transferred in case of death.

The *accomandatio* was stipulated *negociandi causa*; this clause is mentioned in all documents. It was mainly a fiduciary contract, as is the case for any kind of business based on credit. The main obligation of the merchant, or *accomandatario*, was to trade the

money or the merchandise received and to return to the capitalist, or *accomandante*, the capital with profits, after the deduction of one fourth for his own benefit. The risk of the entire operation was borne by the capitalist, while the merchant was only bound to conclude the business and to return capital and interest *bona fide*, or in good faith. This was logical because, in case of a bad bargain, the merchant might lose his job, and the capitalist his capital. There was, in the structure of the contract, a perfect equivalence of services.

It is evident that during the second half of the twelfth century the *accomandatio* was already a well-defined business contract, clearly differentiated from all other types of mercantile contracts. It was certainly a formal contract, and the written act was necessary for the existence of the juridical bond.

In its essential elements the *societas* was only a more complex form of the *accomandatio*. Substantially the difference consisted of the declaration made by the merchant to contribute some of his own money. This contribution constituted a guaranty to the other partner which did not appear in the *accomandatio*, where the merchant conferred only his skill and dealt only with other people's money. Another difference was that in the *societas* the contractors always contributed money, and only on rare occasions do we find the contribution of part-ownerships. Of the total capital of the association, one third was the merchant's (*associatario's*) share, and two thirds was the capitalist's (*associante's*) share.

The *accomandatio* was not terminated by an act of dissolution, which we would expect in the case of a business where the concept of association prevails. Instead it was stipulated as an acknowledgment of credit and it was terminated by an act of payment, which in the cartulary of Guilelmus Cassinensis was recorded under the name of the person who returned the money. Similarly the *societas* was concluded for business purposes or *causa negociandi*. However, the place where the trade would take place was specified exactly with the indication of the town or region or the route to be followed. It was quite rare for the merchant to be allowed to trade *quo sibi videbitur melius*, or the way he thought was best, a clause which is found in almost all the contracts of *accomandatio*. The *societas* was used also in retail trade, or *in botea*; in this case the return of money was not established at a fixed rate, or *usque dum placuerit*.

The documents examined in the following pages are of exceptional importance for the study of the origin of capitalism and capital formation in the Middle Ages. They were classified as loose

pages in the cartulary of Johannes Scriba, although they do not belong to this cartulary, and contain writings, notes and fragments of accounting operations and commercial transactions between two contractors or partners, Ansaldus Baialardus and Ingo de Volta, for the settlement of contracts of *accomandatio* and *societas*.²

Ansaldus Baialardus, a young Genoese businessman at the beginning of his career, appears in these documents as the *tractator* or merchant. Ingo de Volta supplied the capital. In the cartulary of Johannes Scriba there is an act, dated May 1156, where one Baialardus de Pataria emancipated his son Ansaldus, giving him authority to enter into all kinds of transactions, "*negocia emptiones, vendiciones, cambia, permutaciones, locaciones, conductiones, ceterosque contractus libere et sine patrio oblentu.*"³ The mercantile operations of Ansaldus, as shown in the cartulary of Johannes Scriba, involve a contract of *accomandatio* with Ingo de Volta which was directly connected with the documents presented in this paper.⁴

Three ventures covering the business activities of Ansaldus Baialardus and Ingo de Volta over the years 1156 through 1158 are mentioned in the Johannes Scriba papers.

The First Venture

Document C, (Appendix 1), recto, contains the first contractual agreement between Ingo de Volta and Ansaldus Baialardus, from which we learn the juridical nature of the relationship, the specific amount of capital invested, and the earnings obtained from the business transaction. In fact the document reports that a part of the funds given by Ingo to Ansaldus "*fuit capitale lib 205 et sol 4 et den. 1,*" and the earnings reported were 74 pounds. This was certainly a contract of *accomandatio* because the earnings were divided between the capitalist and the merchant in the proportion of three fourths and one fourth. We may also establish, with reasonable accuracy, the date when the contract was concluded. The emancipation of Ansaldus granted by his father Baialardus de Pataria in May 1156 must necessarily have preceded the beginning of his business activity, and we also know that the succeeding contract, which established the termination of this *accomandatio*, was dated October 1157; consequently this transaction was executed in the summer of 1156.⁵

The assets existing at the end of this first contract were reinvested in a new *accomandatio* between the same contractors. The profits from the first agreement were divided between Ingo who received three fourths of total earnings of 74 pounds, or 55 pounds and sol.

10, and Ansaldus who received the remaining one fourth, or 18 pounds and sol. 10. These profits together with Ingo's original capital were then reinvested in a second *accomandatio*, with the exception of a small amount of money which Ingo received in cash. He kept for himself 4 pounds received from one Oblerius Noxencius, and soldi 20 received from banker Bonobello. Therefore the total capital remaining was lib. 254 sol. 14 den. 1 which was reinvested together with capital and earnings contributed by Ansaldus for a total amount of lib. 18 sol. 10.

The Second Venture

The notations concerning the settlement of the second contract of *accomandatio* were reported in Document A, recto, in [a, b, c] and in Document C, recto, in [b] and verso.

In Document A, recto, in [a] was recorded the account for money received by Ansaldus for his commercial operations and the sale of merchandise bought overseas. Ansaldus received a total of lib. 538 sol. 4. The specific assets and the amount paid for each was listed in this document as follows:

for indigo	lib. 90½	sol. 4
for ashes	lib. 4	sol. 6
for Petro Ustachio	lib. 87½	
for the ship	lib. 90	
for Fredenzone	lib. 19	sol. 8
for the profit on the saie*		sol. 20
for wheat	lib. 245	sol. 6
total	lib. 538	sol. 4
Less:		
Expenses for the ship	lib. 11	sol. 10
Expenses for wharf, storage, and carriage	lib. 4	
total net capital	lib. 522	sol. 14

In [b] drawings made by the two contractors against these assets were recorded, as shown below:

Dominus Ingo received from these assets	lib. 17	sol. 16	den. 5
I, Ansaldus, received from these assets	lib. 27		den. 15
	lib. 44	sol. 17	den. 8

*Saie was a cloth of wool

In [c] supporting figures and mathematical calculations are also presented.

Total earnings for the second venture were reported in Document C, recto, in [b], and we may summarize their calculations as follows:

capital of Ingo	lib. 254	sol. 14	den. 1
capital of Ansaldo	lib. 18	sol. 10	
	<hr/>		
	lib. 273	sol. 4	den. 1
total assets	lib. 522		
total capital	lib. 273	sol. 4	den. 1
total earnings	lib. 248	sol. 15	den. 11

The fragments of calculations contained in Document C, verso, in [a, c, d,] and recto in [b] were specifically related to the determination of these earnings. The final results, with capitals and earnings, were reported in Document C, verso, in [a] as follows:

capital of Ingo	lib. 254	sol. 14	den. 1
capital of Ansaldo	lib. 18	sol. 10	
profit	lib. 244	sol. 15	den. 11
	<hr/>		
	lib. 518	sol. 0	den. 0

There is no explanation for the difference in total earnings of lib. 4 between the two statements. Following is the record of two shares of capital and profits attributed to each of the two contractors:

attributed to Ingo	lib. 412	sol. 7	den. 2
[attributed to] Ansaldo	lib. 64	sol. 15	den. 2
	<hr/>		
	lib. 477		den. 28

Following are other accounting records and fragments of arithmetical calculations to determine the allocation of earnings.

The Third Venture

After the very satisfactory results of the venture under the second contract of *accomandatio*, Ansaldo, whose capital had increased considerably, decided to participate with Ingo in a third venture under a contract of *societas*. Document A, verso, in [b], and recto, in [c], discloses the assets invested in the new business venture as follows:

societas, capital of Ansaldo	lib. 64	sol. 8	den. 8
capital of Ingo	lib. 128	sol. 17	den. 4
accomandatio, capital of Ingo	lib. 284	sol. 9	den. 10
	<hr/>		
	lib. 477	sol. 15	den. 10

The document also discloses, in [c], the main clauses of this contract, among them: the specific route to be followed by Ansaldus, including the important sea-towns in Syria and Egypt, his obligation to give a detailed account of costs and expenses, and the clause "*quarta superflui in proficuum societatis.*" This means that when the two contracts of *accomandatio* and *societas* were stipulated "*ad quartam proficui*" for the same business venture, one fourth of the earnings which usually was given to the merchant for an isolated *accomandatio* "*debet reverti ad societatem,*" that is, had to be assigned to the *societas*. Consequently, the merchant received only one eighth of the earnings.

The opening period "*tertia die augusti . . . in capitulo*" was clearly a reference to the deed of partnership drawn up before the witnesses and a notary, who undoubtedly was Johannes Scriba. He had already drawn up the preceding deed which was dated October 1157, consequently this contract of *societas* was stipulated on the 3rd of August 1158.⁶

In Document A, verso, in [d], there is what appears to be a warranty by Ingo, who bound himself to pay lib 26 sol. 10 owed by one Guiscardus, under the condition that if this money was promptly collected, "*sunt in societate lu crature ut alie,*" that is, it ought to be added to the funds already contributed to the association. In [e] uncollected credits were recorded which, consequently, "*remanent Janue*" or had to remain in Genoa, because it was impossible to invest them in the newly formed *societas*. These uncollected credits consisted of 4 pounds owed by Guiscardus, and sol. 39 minus den. 4 owed by one Ingo Nocentius. The notations concerning the final settlement of the assets were recorded in the second part of Document A, recto. The inventory which appears in [d] concerns the assets as they were recorded at the end of the overseas journey made by Ansaldus, and their total amount was lib. 760 sol. 18 den. 3, free of all expenses. This inventory includes merchandise specified by weight and measure, and the estimated price, as shown below:

95 quintals of pepper and brazil wood at sol. 100	lib. 475		
62 cantars of cotton at sol. 57	lib. 176	sol. 14	
22 cantars of sugar at sol. 70	lib. 77		
75 lib. of [?]	lib. 21	sol. 11	den. 3
22 mennas of cardamon in cash	lib. 3 lib. 9		
of which I spent lib. 4½ for providing the money			

for Guiscardo	lib. 3	sol. 3	
	lib. 765	sol. 8	den. 3
it remains to be received sol. 17 and a silver cup			

In the lower margin of the document Ansaldus recorded, among other numbers, the total amount of lib. 765 sol. 8 den. 3, and the amount obtained after the deduction of lib. 4½ for expenses "*in fornimento pecuniae*," of lib. 760 sol. 18 den. 3. Ansaldus added to this total a credit for sol. 17 and a "*cuppa argenti*" or a silver cup. This credit for sol. 17 represented a balance for the amount owed by Guiscardus of his original debt of four pounds, of which he had paid lib. 3 sol. 3, as shown in the above inventory.

Document A, verso, was utilized for notes and calculations concerning the statement shown on the recto of the manuscript. On the right side of the document Ansaldus recorded particular contractual clauses related to credit agreements.

From Document B, recto, in [a], we learn that in the final settlement of capital and earnings Ansaldus received 140 pounds which were added to his share of profits of lib. 3 den. 27 realized from the sale of cotton at a price higher than the price estimated in inventory. The inventory which followed represented the assets attributed to Ansaldus, who received more than his share, that is, as we read in [c], "*habet plus lib. 10 minus den. 9.*" Ansaldus was also debited for the equivalent of 15 bezants "*quos debebat reddere*," which he had to return, and the amount was equal to lib. 7 sol. 10. In fact Ingo had withdrawn 36 bezants and Ansaldus 32 bezants, for a total of 68 bezants; but Ansaldus was supposed to receive only one fourth of this amount, or 17 bezants, consequently he had to return the difference of 15 bezants, which was debited to his account.⁷

The statement of merchandise and money received by Ansaldus was reported in Document B, recto, in [b], as follows:

I received cantars 16 rotuli			
10 of cotton	lib. 45	sol. 18	den. 10
in cash	lib. 16		
item, for pepper at the rate			
of sol. 100	lib. 64	sol. 8	den. 8
for alum, 5½ cantars	lib. 19	sol. 5	
for 15 bezants which he had			
to give	lib. 7	sol. 10	
	lib. 153	sol. 1	den. 18

Document B, verso, in just a short fragment containing notes together with the contractual clause "*si excreverit vel decreverit pro racione inde habiturus est Ansaldo.*"

Summary and Conclusion

The business activity of Ansaldo Baiardo was documented for three voyages which were covered by three distinct contracts and covered the period from the summer of 1156 through winter of 1158. If we consider the historical context of the content of these documents, a small but significant picture of the entire glorious past of the Genoese Republic is reflected. In particular, the last journey of Ansaldo presents a precise and detailed documentation of these commercial expeditions between Genoa and the Middle East, which were probably undertaken on a regular basis. These documents are also interesting from a legal stand-point, because of the information that we may collect about the final settlement of the contracts of *accomandatio* and *societas maris*.

The first operation on the final settlement involved the valuation of all assets, and this was generally done as soon as the *tractator* or merchant returned from his overseas journey. For this purpose the contractors had to prepare an inventory of all items which were specifically classified: cash on hand, merchandise, debts and credits. Each type of merchandise was valued at current market price, and on this basis the parties made the division of the common goods. The clause "*si excreverit vel decreverit*" was fairly common; it indicated that in the event that the selling price of the allotted merchandise was different from the estimated price, the difference had to be shared "*pro racione*" or in proportion. The expenses were deducted immediately from the total assets together with credits which usually were not shared until their collection.

An important factor to consider is that although Ingo and Ansaldo maintained a business relationship for several months, each transaction or overseas voyage was characterized by a distinct contract duly notarized, and not by a general agreement which characterizes a modern partnership. We would also like to call attention to the amount of earnings realized in this type of commercial venture. During the first journey Ansaldo realized a net profit of 74 pounds. Considering that the invested capital was lib. 205 sol. 4 den. 1, this represents a rate of return of thirty-six per cent. The second journey was even more successful because on a total of lib. 273 sol. 4 den. 1, the two partners realized earnings for lib. 248 sol. 15 den. 11, with a rate of return of almost one hundred per

cent. Finally, for the third journey, Ansaldo realized a profit of lib. 283 on a capital of lib. 477 sol. 15 den. 10, with a sixty percent rate of return.

During this short period of three commercial ventures and by re-investing capital and profits, Ingo de Volta tripled his initial capital and Ansaldo, without initial funds, accumulated a capital of 150 Genoese pounds.

These old Genoese documents have revealed some important economic phenomena, such as the process of capital accumulation and the clear distinction between capital and labor. We may conclude that the analysis of these documents proves that toward the end of the twelfth century the Genoese economy was based on a capitalistic system, and therefore we can see the attributes which were essential and typical to such an economy. Through the study of these financial operations documented in the contracts of *acomandatio* and *societas* it is possible to perceive the evolution of an economic organization which may be defined as typically "capitalistic," both in its essential forms and its operations.

APPENDIX

[CARTULARY OF JOHANNES SCRIBA]

[Document A, Recto]

[a] + In nomine domini amen. Recordacionem ad Memoriam retinendam facio ego Ansaldo Baiardus de racione quam feci con domino Ingo quum veni in nave de ospitale. Habui de indico lib. .XC. ÷ s. .IIII. Habui de cexeri lib. .IIII. et s. .VI. Habui de Petro Ustachio lib. .LXXXVII. ÷ Habui de nave lib. .XC. de quibus dispendidi in nave lib. .XI ÷ Habui de Fredençone lib. .XVIII. et s. .VIII. Habui de lucro de saie s. .XX. Habui de grano lib. .CCXLV. et s. .VI. de quibus dedi in molo et in staçon et aductura lib. .IIII.

[b] Dominus Ingo cepit de isto abere lib. .XVII. et s. .XVI. et dr. .V. Ego Ansaldo cepi de isto abere lib. .XXVII. et dr. .XV.

[c]

CCCCXXXVIII

XV ÷

LXXXI. s. IIII

IIII. II. s. VI

LXXXVII s. X

LXXXX s. XIIII d. XX

CCLXXXV d. XXI

CCLXXXIIII ÷ minus d. II

CXXVIII s. XVII d. IIII

LXIIII s. VIII d. VIII

XVIII s. VIII
CCXLV s. VI

LIII ÷ XXII

DXXII ÷ s. IIII
CCCCLXXVII s. VII d. VIII

[d]

LXXXXV centenaria piperis et
braçilis ad s. C

lb. CCCCLXXV

LXII cantaria bombacis ad
s. LVII

lb. CLXXVI s. XIII

XXII cantaria çucarini ad
s. LXX

lb. LXXVII

LXXV lb.

lb. XXI s. XI d. III

XXII mennas cardamoni

lb. III

in denariis

lb. VIII

quorum expedit in fornimento
pecuniae lb. IIII ÷

de Guiscardo

lb. III s. III

remanent s. XVII ad accipiendum
et cuppa argenti

CCLXXXII s. XVIII d. VII

CLXXXIII s. VI

CLXXV

CXVIII. CVII s. XVI

DCCLX s. XVIII d. III

DCCCLXXV

DCCLXV. s. VIII d. III

XIII VIII.

XXXVIII XIII. VII III ÷

[Document A, Verso]

[a] [Complicated series of arithmetical operations, with some indecipherable inscriptions]

[b]

CCCC XIII. s. VII d. II.

LXIII. s. VIII. d. VIII

CXXVIII s. XVII d. IIII.

CCLXXXIII ÷ minus d. II.

[c] III. die augusti. Testes Lambertus Guercius Dragus Fraimundus Petrus Ferrarius. in capitulo. Ultramare et Damascum si volet inde Sciciliam si voluerit vel Januam vel Alexandriam inde Januam et a Sicilia. Quarta superflui in proficuum societatis.

Si ei Ingo voluerit demandare de expensis quas ante istud iter fecerit ipse Ansaldus ei debet inde respondere racionabiliter et componere quid ratio erit.

[d] Et remanet Ingo pagator de lb. XXVI ÷ si Guiscardus tinctor eas non solverit qui eas pagare debet ut dicit. Et si solverit eas sint in societate lucrature ut alie.

[e] Remanent Janue lb. IIII. huius societatis quas Guiscardus tinctor ut dicit debet. et s. XXXVIII minus d. IIII mingorensium quos debet Ingo Nocentius et non sunt in summa aliqua computati.

[Document B, Recto]

[a] Bombace crevit lb. XII. s. VIII. unde proveniunt Ansaldo lb. III. d. XXVII

Debebat recipere lb. CXL. vult recipere lb. CXLIII d. XXVII

[b] Receptit bombacis cantaria

XVI rotulos X lb. XXXXV s. XVIII d. X

In denariis lb. XVI

Item in pipere ad rationem de s. C lb. LXIII. s. VIII. d. VIII.

In alumine cantaria V ÷ quartam scilicet lb. XVIII. s. V.

In racione bisanciorum

XV. quos debebat

reddere lb. VII ÷

Summa [lb.] CLIII. s. I d. XVIII.

[c] et de bisanciis XXXVI. quos dominus Ingo habuit

et de bisanciis XXXII. quos ipse habuit habet

quartam partem et de his reddidit superfluum

habet plus lb. X minus d. VIII.

[Document B, Verso]

Piperis et braçillis centenaria LXXXV. ad racionem de lb. V.

Aluminis cantaria XXII ad racionem de lb. III ÷

Si excreverit vel decreverit pro racione inde habiturus est Ansaldo.

Ansaldo dedi lb. XV. et s. IIII.

[Document C, Recto]

[a] + In nomine Domini amen. Recordacionem facio ego Ansaldo Baialardus de abere domini Ingonis quem porto mecum ad quartum proficui. fuit capitale lib. CCV. et s. IIII. et dr. I. unde Dei gratia lucratus sum lib. LXXIII. de quo lucro facio capitale pro voluntate domini Ingonis. de supra scriptis lib. LXXIII. pertinet ad meam

partem lib. XVIII ÷ et quod deus dederit in istas lib. XVIII ÷ capitale et proficuum debet esse meum et remanet ad dominum Ingo de suprascripto lucro lib. LV ÷ de quibus dominus Ingo accepit lib. III. de Oblerio Noxencio et de Bonobello bancherio s. XL. et quod remanet de istis lib. LV ÷ scilicet lib. XLVIII ÷ facit dominus Ingo capitale et est supra totum lib. CCLIII. et s. XIII. et dr. I. unde ego Ansaldus debeo habere quartam partem proficui quod deus dederit. Ingo Noxencius debet reddere in ista compagnia s. XL. minus dr. III. milgorensium de coperta viride quam ei comparavi.

[b]		s. II. d. II.
		DXLVI.
sunt lb. DXXII.		XXVIII. s. VIII. d. II.
capitale CCLXXIII. s. III. d. I.		
		proficuum
		CCXXVII. s. VI.
proficuum lb. CCXLVIII. s. XVI. minus d. I.		
		LVI. ÷ s. XII. ÷ d. VII
		.DC. LVI. s. XII. d. VIII
XVII. s. VIII. d. II.		XXXI ÷
XVIII ÷	XXVIII.	LXIII.
	s. II. d. ÷ et nona.	CCCXXII.
		CLXVIII. XXXV.
s. I. d. I ÷	DLX. s. XXXVII.	CCCCXLI. III.
	s. XIII.	CLXX. CCCXL.

[Document C, Verso]

[a]		CCLXX.
Capitale Ingonis	lb. CCLIII.	s. XIII. d. I.
Ansaldi Capitale	lb. XVIII ÷	
Proficuum	lb. CCXXXIII.	s. XVI minus d. I.
Supra totum	lb. DXVII.	
[b] Supersunt Ingoni	lb. CCCCXII.	s. VII. d. II.
Ansaldo	lb. LXIII	s. XV. d. II.
	lb. CCCCLXXVII	
	d. XXVIII	
		CCCCXVII. s. XV. d. X.
		XXXXV. s. XII. d. VII.
[c]		s. III. d. I.
CCLIII. s. XIII. d. I.		

CCCCXXX. s. XIII. d. VII.
minus d.
s. VII. d. II.

[d] XVIII ÷
s. VIII ÷ LVI. s. XVI ÷
CLXX. XVI ÷ minus d. I.
CCXXVII. s. VI. Pars Analdi lb. LXXXXI.
CCCC XIII. s. VII. d. II. s. XVI d. V
XIII. s. XV. d. II
III s. III d. VIII

LVI. s. XVII ÷
LXIII s. VIII d. VIII XV
CCXXIII. II.
XXVII s. XV. d. II.
XVII. s. XVI. d. V

FOOTNOTES

¹State Archives of Genoa: *Cartularium no. 1*, fos. 1-163, attributed to Johannes Scriba (1154-1164); *Cartularium no. 2*, fos. 1-231, attributed to Lanfrancus, but containing acts of the notary Obertus Scriba de Mercato (1182-1214); *Cartularium no. 3*, fos. 1-151, Part I (1192-1233) and Part II (1192-1248), attributed to Lanfrancus and others (some of the other notaries mentioned in the cartulary are: Johannes Saurinus, Guido de S. Ambrosio, Guilielmus de Sauro, Facius de S. Donato, Bonusvassallus de Maiori); *Cartularium no. 4*, fos. 1-258, attributed to Lanfrancus and others, but containing acts of the notary Obertus Scriba de Mercato (1200-1207); *Cartularium no. 5*, fos. 1-329, attributed to Johannes de Amandolexio (1182-1214); *Cartularium no. 6*, fos. 1-334, attributed to Guilielmus Cassinensis and others (1188-1206).

²State Archives of Genoa, *Cartularium no. 1* attributed to Johannes Scriba (1154-1164), Fogli Sciolti nos. 164, 165 and 166. These documents were first examined by Guido Astuti, *Rendiconti Mercantili Inediti del Cartolare di Giovanni Scriba, Pubblicati con Introduzione e Commento* (Turin, 1933). See also Florence Edler De Roover, "Partnership Accounts in Twelfth Century Genoa," *Bulletin of the Business Historical Society*, XV (December, 1941), pp. 87-92.

³*Chartarum*, col. 331, no. 315.

⁴*Chartarum*, col. 447, no. 521.

⁵Astuti, pp. 17-18.

⁶Astuti, pp. 29-30.

⁷Astuti, pp. 34-35.

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ACCOUNTING TEXTBOOKS IN SEVENTEENTH CENTURY ENGLAND – Chiefly About Collins' Work –*

In *Accounting in England and Scotland: 1543-1800*, Professor B. S. Yamey writes, "In the 1630s there was a spurt in the publication of works on accounting: Carpenter's *Excellent Instruction* came in 1632; in the next year the third (and earliest known) edition of Ralph Handson's broadside, *Analysis of Merchants Accompts*, was issued; and in 1635 came the first edition of Richard Dafforne's *Merchants Mirrour*, They mark the high point of Dutch influence on English writing in our field; after this group of publications, direct Dutch influence becomes progressively attenuated." (p. 167) He continues, "After Dafforne, books on accounting appeared in increasing numbers between 1641 and 1740, over 30 new authors contributed books on accounting It is difficult to trace foreign influence on the books in English published after Dafforne and his immediate successors. The principal treatises of the last quarter of the seventeenth and the whole of the eighteenth century were essentially home-grown, with a preponderance of the best works being published in Scotland, or in England by Scottish authors." (p. 170) He refers to Robert Colinson's *Idea Rationaria*, 1683, as the first book on accounting published in Scotland. In Richard Brown's *A History of Accounting and Accountants*, 1905, J. Row Fogo says that Dafforne was succeeded by John Collins and Abraham Liset, "who both gave their instructions perfectly competently, but not in a manner which calls for particular notice." (p. 155)

John Collins' *An Introduction To Merchants Accounts* was published in London in 1653. The second edition was published under the title *An Introduction to Merchant-Accompts* in 1674 in London. This article will examine Collins' textbooks to consider the influence of merchants' current trading activities upon the accounting texts of those times.

*Based upon a paper delivered at the Second World Congress of Accounting Historians.

John Collins the Man

His life career and the social and economic background to his works will be examined on the basis of the preface of the second edition of his book and of Chapter 4 of William Letwin's *The Origins of Scientific Economics*, London, 1963.

John Collins was born in 1625, the son of a poor minister in Wood Eaton, a village near Oxford. He was sent to the local grammar school, but both parents died and he was placed as an apprentice to a bookseller in Oxford who failed. He spent the years from 1639 to 1642 working under John Marr, Clerk of the Kitchen to the then Prince of Wales, later Charles II. Marr was an expert on sundials, and laid out several dials in the gardens of Whitehall Palace. He instructed Collins in this science and in mathematics. Unfortunately, due to the outbreak of the Civil War, Charles I had to retrench his expenses, especially on his household; so Collins had to go elsewhere.

He spent the next seven years, his seventeenth to twenty-fourth, at sea, on an English ship, which for much of the period was engaged in the Venetian service. The Venetians were involved in a prolonged, intermittent war with the Turks, and were recruiting mercenaries, some of them English. At the beginning of the seventeenth century the Ottomans still controlled a huge empire with great military resources. By land, it was a direct threat to Venetian control of the Adriatic, for the Venetian-ruled part of Dalmatia had been reduced in the sixteenth century to a very narrow strip, and Venice had barely a toehold in Albania. By sea, the Turkish threat was not direct as long as Venice held the Ionian Islands and Crete. From the Turkish point of view, Crete in Christian hands threatened communications within their empire. When the Knights of St. John captured a ship from the Turkish fleet containing members of the sultan's harem, the sultan mobilized a powerful armada to attack Crete, where the Knights of St. John had stopped for supplies on their way home.

For geographical and military considerations and national sentiment Venice declared war on Turkey to defend Crete. Between 1645 and 1718 the Venetians intermittently fought the Turks in Dalmatia as well as in the Aegean and Ionian Seas.¹ During most of the seventeenth century, only the Dutch, English, and French navies were stronger than the Venetian navy in the Mediterranean.² The English and Dutch in particular excelled in building, sailing, and fighting their ships.³

In the seventeenth century Venice began to hire English and Dutch ships as well as soldiers.⁴ Collins' English ship was engaged in Venetian service to defend Crete. In the preface "To the Reader" in the second edition of Collins' text, he writes: "I went Seven Years to Sea, most of it in an English Merchant-man, become a Man of Warr in the Venetian Service against the Turks, in which having leisure, I applyed part of my Studies to Mathematics, and Merchants-Accompts, and upon my return, fell to the Practice thereof, and afterwards profest Writing, Merchants-Accompts, and some parts of the Mathematics." He seems to have been purser of the ship, perhaps because of his mathematical talent.

Collins returned to London in 1649, the year in which Charles I was executed at Whitehall Palace and the establishment of the "Commonwealth and Free State" was declared. Collins set up as a teacher of writing, mathematics, and accounting. In 1653 he published *An Introduction To Merchants Accounts* in London.⁵ It was bound up with Malynes' *Consuetudo, Vel Lex and Mercatoria*, and Dafforne's *The Merchants Mirrour* (1651), both of which were popular texts. It was reprinted in 1664 and 1665, but in 1666 the Great Fire consumed most of the copies available for sale.

With the good reputation of his accounting text, Collins was soon offered a position as auditor in the Excise Office. At the Restoration, with the help of Sir Robert Morray, the First President of the Royal Society, he became a clerk at Court and later married Bellona, daughter of William Austin, one of the King's master cooks. By a direction from Charles II to the Lord Treasurer, he continued to work in the Excise Office. In the meanwhile, he continued his work in mathematics. In 1667 he was elected a Fellow of the Royal Society, and entered on a voluminous correspondence with all the leading contemporary mathematicians. But his career in the Civil Service did not flourish. In 1667 he had not advanced, and the Excise Office was dismantled as he had feared. Shortly after the Second Dutch War (1664-67), the parliamentary opposition seized an opportunity to embarrass the King by questioning the financial administration of the war. Collins was appointed chief accountant of the Commission of Accounts to investigate the matter. But he was paid less than had been promised, because he urged things too far to the King's advantage. By 1670 the Commissioners (without Collins' help) had prepared a report very unfavorable to the War government. Charles II gave it to Sir Philip Warwick for criticism who referred it to Collins who pointed out its defects. Warwick asked

Secretary of State Trevor to get Collins an appointment worth £ 200 a year. But this was not done.

In the summer of 1670 a Council for Plantations—parallel to the Council for Trade—was established, and Collins was appointed as one of two clerks. In 1671, when the Council was enlarged, he was too busy even to attend the meetings of the Royal Society. His salary was supposed to have been £ 150 a year, the highest he had yet earned. But in those years, the King's finances were more strained than ever and he was paid little more than a tithe of it. In addition, the half-pay pension awarded him for the loss of his place in the Excise Office was terminated in that year. His wife's pay as a laundress to the Queen was also stopped. He had to make a living by doing some accounting work on the side. In order to economize, he took his large family (Letwin mentions seven children) to his father-in-law's house. After working in his next employment, the Farthing Office, for three and one half years, he entered the service of the Company of the Royal Fishery, then in its infancy, and worked as accountant to the Company almost until his death in 1683.

As a fellow of the Royal Society he enjoyed the friendship of Newton and other great British mathematicians of his time. He circulated information among them of each other's latest writings, and of old and new books published. He was proud of his correspondence with the learned and of being a fellow of the Royal Society. He always signed himself "John Collins, Fellow of the Royal Society, Philomath." On the title page of his second edition, we find this signature. But his published writings on navigation, gauging, and computations of discounts and interest were mainly applications learned from his great friends. His bookkeeping texts closely follow the Italian method; so both as an economist and mathematician, he was not an original worker.

Collins' Texts

On the title page of Collins' *An Introduction to Merchants Accounts*, 1653, the table of contents lists "five questions" (exercises): 1. "An easie Question to enter *Beginners*, with *Instructions* to Post, 2. A question of a Merchant, adventuring a Stock or Cargazon with the Purser or Sopracargo of a Ship, 3. A question of Factorage or goods received by Consignation and Returns shipt off, 4. a question of a ships freightment, and 5. A question of double Exchanges". These exercises chiefly treat ventures by

agents, and pay little attention to instruction for beginners. His book may thus be supposed to have been written as an advanced course following Dafforne's textbook. Below the name of the author are the words: "And may serve as an Appendix to the Merchants Myrrou lately reprinted." Collins' text was published with a reprint of Dafforne's.

In the preface to the second edition, we are given more information about the publication of the first and second editions. Stationers had urged him to alter and expand the first edition, presuming that he had been much concerned with important public accompts. He may have disappointed them for he enlarged the first edition by adding two new chapters,—A Partable Accompt between three Dyers, and A Controversal Partable Accompt between three Turkey Merchants. The second edition was published in 1674, by Robert Horn, Stationer. After his death it was republished in 1697, entitled *The Perfect Method of Merchants Accompts Demonstrated*.

Collins gives two reasons for publishing his second edition. The first is that he might have an opportunity of showing appreciation to Sir Anthony, Earl of Shaftsbury, Lord President of His Majesties Council for Trade, and Plantations, who endeavoured to have him promoted to a clerkship in his Council and favored him with nominations for various public offices during his Lordship's High Chancelorship. The second is that he had spent time in the study of merchants-accounts, ships-accounts, and in the computing of interest and the valuation of leases, mortgages, and annuities.

After the preface, in the "Direction To Post or Transport the Journal into the Ledger", Collins describes the posting of entries from the journal to the ledger, the form of ledger account, and the method of entering the ledger. But he does not discuss the fundamentals of double-entry bookkeeping for the guidance of beginners. After this introductory material, Collins comes to the first of the questions: "A Wast question to enter Beginners".⁶ Here the waste book, the journal and the ledger are illustrated.

Illustrative Problems ("Questons")

The transactions illustrated are from the Mediterranean trade of C. Dethick, a merchant of London. He adventured on a trading voyage with A. Bateman, his kinsman, who was supercargo of the Ship Jonas, and who had orders to sell the original cargo and to purchase new goods with the returns. He was to be allowed a certain percentage of all the goods bought or sold. The Ship Jonas carried

230 pigs of lead for Yarmouth, where the supercargo drew on his master in London and bought 312 barrels of herrings. At Alicante he sold 160 pigs of lead, 216 barrels of herrings and bought 420 searns of barilla (the raw material for soap). At Venice 96 barrels of herrings, the remaining 70 pigs of lead and the whole quantity of barilla were sold, and a part of the proceeds lent out to Jewish merchants who loaded corn at Ancona and were bound for Genoa. The supercargo purchased 16 searns of White Soap at Venice, and 92 butts of Provence olive oil and 5 hogsheads of capers at Toulon. After collecting the repayment of the loan from the Jewish merchants at Genoa, he returned to London.

At the first question, we have the illustration of Dethick's journal and ledger, recording the sales of the goods brought by the Ship Jonas. The entire quantity of Venetian soap and olive oil were sold, but the capers remain unsold. Each kind of merchandise has its specific goods account.

Charges for the goods are entered on the debit side of the goods accounts and on the credit side of the money account. The unpaid freight is on the credit side of the Ship Jonas account. Dethick paid these charges with part of the funds received from the purchaser of the olive oil. However, the costs incurred for goods purchased abroad are not entered, the balances in the goods accounts, therefore, do not indicate the profit or loss made on the goods even after they were sold.

The second question, "Being the Sopracargo's or Merchant-Adventures Accounts, Stated two several ways" is divided into two parts. In the first part, are the copies of accounts maintained for every city or port at which the supercargo sold or bought goods on the account of his principal. The first entry is for Yarmouth where the supercargo purchased herrings with money drawn on the principal in London. Next, there are the accounts from Alicante where he sold lead and herrings and purchased barilla. There is also the copy of "Mr. Charles Dethick his Account current" from that place. On the credit side of this current account the balance of the money, after the purchase of herrings at Yarmouth, is transferred from the herrings account at Yarmouth, and after this, the proceeds of lead and herrings sales at Alicante are transferred from the credit side of each account. On the debit side of the current account is the amount of the barilla purchased (the debit balance of the barilla account) and the credit balance of this account with the statement to send it to the next port or city.

The supercargo entered in English pounds in the account for Yarmouth, but Alicante transactions are recorded in French money (livres). In the copy of Mr. Dethick's account current at Venice, the balance of the current account at Alicante and the net proceeds from lead, herrings and barilla sold at Venice are entered on its credit side. The amount of Venice soap purchased, the money lent to the Jewish merchants, and the balance of the credit side as the balance remaining in the supercargo's hands are found on the debit side. The accounts of lead, herrings, barilla and white soap at Venice are entered in Venetian money (duccat), but Levant dollars are used in this current account.

The account of trades at Toulon are reported to London from Genoa. Mr. Charles Dethick's account current at Toulon contains the amount collected from the Jewish merchants and the balance of the current account at Venice, on the credit side and the purchase of capers and olive oil with the balance of the credit side, on its debit side. This current account is recorded in Levant dollars as are the goods accounts which also have the amounts noted in Genoese florin. The supercargo uses the currency of the actual locations of transactions in his account book. The calculation of the trades in the master's account in every city is balanced at each city and transferred to his current account for the next port. At last, Dethick's servant was ordered to sell the goods brought back in the Ship Jonas to London. The illustration contains the accounts from the supercargo, and the servant and "Charles Dethick his Account of Stock or Cargazon", or his financial statement (Appendix I), which is drawn up from the receipts and payments made by him and from various other accounting materials. The balance on the credit side of this account indicates the net profit of this adventure. Dethick uses an unsystematic accounting method, based on the accounting reports from his supercargo and servant and his own cash book, but in the latter half of the second question, he enters the same transactions in the double-entry method.

The third question, "Being a Question of *Factorage*"—concerns the accounts kept by a factor (agent) in his own account books. Thomas Sweet, a merchant, removing to settle at Seville or Sanlucare, appoints T. Wood his factor to dispose of his property—the debts owed to or by other merchants, his interest in the Ship Speedwell, his house, the goods belonging to him, the partable (share capital) of Turkey Company, etc.,—and to make returns in lead and fustians from England. In Sweet's inventory we find Barbados' coten wool, West-India ginger and the imitation Venetian fustians of

English manufacture. After this inventory the waste-book continues with transactions in merchandise as follows: the sale of Barbados' cotton wool to an English merchant, the purchase of lead and Lancashire imitation Milan fustians, the barter of ginger and lead and the consignment of Spanish tobacco from Sweet. These English imitations of foreign fustians were probably to be re-exported from Spain to the New World or West Indies Islands.

The fourth question is about a shipping freight. Collins instructs us that a note or pocket book, a book of the ships expenses, charges or disbursements, a book of mariners wages' and a freight book are necessary to keep ships accounts. At the end of the first edition, he deals with the account of double exchange.

There are no new developments of accounting method in Collins' accounting textbooks. Collins does not try to use the synthetic entry method of the journal and the ledger (general goods account, sundries etc.), and his accounting system is formed simply with specific goods accounts and personal accounts, without nominal accounts. The charges upon the goods are entered in each goods account or personal account. The stock account is in the name of the master. The illustrations in his textbook are mainly about factorage adventures which may have had their origin in his experiences as purser of an English ship on a Mediterranean trading voyage.

Illustrations Reflect English Commercial Activity

Collins' illustrations contain the records of transactions with merchants in the following cities: London, Yarmouth, Lisbon, Seville, Sanlucar, Alicante, Valencia, Toulon, Genoa, Leghorn, Venice, Zante etc. The kinds of goods traded include herrings, lead, cloth from England, soap from Venice, barilla, capers, olive oil, currants, West-Indian ginger from Spain, and Spanish tobacco. Collins' illustrations reflect English foreign policy and trade of those time including trading ventures with the southern coast of Spain and the Mediterranean cities. English merchants in the Elizabethan age traded with the merchants of Venice, the Greek Islands, and Turkish cities across the Mediterranean even during the war with Spain. In the seventeenth century they came to regard Venice as their southern trading base. Even in the age of the Commonwealth, Oliver Cromwell recognized the important position of England in the Mediterranean and dispatched Blake's fleet to that sea not only to defend the English merchants but also to demonstrate English foreign pol-

icy. After that time, the English Navy became important in the Mediterranean.⁷

The illustration of trade in J. Peele's first work (1553) uses the account-books of a London grocer engaged in domestic trade with London, Dartmouth, Totnes, Salisbury, Hawkhurst, Derby, Norwich etc. dealing with Wiltshire white, Kentish cloth, Kersey canvas, Norwich worsted, Devonshire kersies, oil, French wines etc. There is also one foreign trade, the consignment of Devonshire kersies to a servant in Antwerp (Flanders account). By contrast, there are many examples of foreign trade in the illustration in Peele's second book (1569) which is said to have been influenced by Weddington's accounting book of 1567. Frauncis Twyford, a London mercer, exports Northern Kersies from Suffolk or Kent, Devonshire cloth, Manchester cotton etc., to his factor at Vigo in Spain, and imports wax, civil oil, basterdes, soap, alum, raisins of Malaga, etc. Manchester cotton, Welsh cotton, and wax are exported to a factor at Rouen, and the imported goods are cap paper, playing cards, racket, Parish thread, Vascon and Bordeaux wines. He also engaged in trade with merchants in Venice and Florence. Raisins of Malaga and basterdes from Spain are re-exported and fine cloths bought in Kent and Suffolk are sent to the factor in Antwerp. Furthermore, he imports wainscot, chapboard, woad, madder, Lukes satin, holmes fustians, etc.

In the seventeenth century, Richard Dafforne gives us another illustration of trade in his *The Merchants Mirrour* (1635). An English merchant of London is engaged in domestic trade with merchants in Colchester and Plymouth, and in foreign trade with merchants in Amsterdam, Antwerp, Flushing, Roanne, Lisbon, Danzig etc., in company with them, or employing them as factors. Sometimes he acts as their factor. Merchandise includes Leeds dozens, kersies, sayes, cambrics, figs, silver, sugar, pepper, raisins, bayes, and wines. Cambric is imported from Holland, and figs, raisins, sugar, etc., from Lisbon, and silver from France. Pepper is exported, but it may have been bought in Lisbon. The geographical extent of the commercial activities in Dafforne's textbook includes the cities along the North Sea and the Atlantic Ocean.

English merchants' activities from the cities of England to the foreign cities on the coast of the Atlantic Ocean in the illustrations in English accounting textbooks up to the first half of the seventeenth century reflect the actual development of English foreign trade. From the beginning of this century the English government began to recognize the strategic importance of the Straits of

Gibraltar and moved to the domination of the Mediterranean. Collins' accounting textbook shows this development in the trading pattern. As we know from Brown's *A History of Accounting and Accountants*, no progress in accounting methods is to be found in Collins' accounting book; but it surely shows that the merchant's accounts are the mirror in which a countries commercial activities are reflected. This, perhaps, is the meaning of the title of Daforne's accounting text.

FOOTNOTES

¹Lane, pp. 408-09.

²Lane, p. 4071.

³Lane, p. 401.

⁴Lane, p. 399.

⁵According to Letwin's book and the preface of the second edition of Collins' textbook, this work was written in 1652, but on its title page the year of its publication is 1653. We can find no evidence of a book published in 1652.

⁶The titles of the questions given in the table of contents differ somewhat with those used in the body of the text.

⁷Trevelyan, Part 4, Chapter 4.

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THE PRESERVATION OF SOURCE MATERIALS*

A copy of De Morgan's *Arithmetical books from the invention of printing to the present time* dated 1847 in the Antiquarian Collection of The Institute of Chartered Accountants of Scotland contains the passage: "The most worthless book of a bygone age is a record worthy of preservation. Like a telescopic star, its obscurity may render it unavailable for most purposes; but it serves, in hands which know how to use it, to determine the places of more important bodies."

Although the number of books published since then has made us more selective today, there is still a lot of truth in that comment. All types of accounting records are potential sources of economic and accounting history. Each type (manuscripts, company records and statements, and published books) has value and should be carefully preserved.

Manuscript Materials

Manuscript accounting material may have considerable side-value, for social or political history. As R. Waldron said recently in his article, "The Necessity of Preserving Accounting Records":

"Accountants . . . are . . . the diarists of their time".

Old manuscript accounts may also aid language studies. A striking example of this was a Scots tailor's MS account book dated 1629 in the Scottish Institute's Antiquarian Collection. This was lent for several months to the staff of the Scottish National Dictionary of the old Scots language, at Edinburgh University. At that time the dictionary project had been going for 30 years; yet this book yielded 200 more "new" old words: it was full of tailors' jargon.

*Based upon a paper delivered at the Second World Congress of Accounting Historians.

First catch your manuscript—

The accounting historian's part in the wider preservation (i.e., keeping of old documents) is to conduct a campaign to persuade people—and this include librarians who are forced to prune their stocks of material through lack of space—not to destroy old business records or printed books until an accountant expert has examined them. Even families may uncover and turn out useful historical records when they move house. (A former member of the Scottish Institute staff moved into a house two years ago and found newspapers dated 1928 under the floor-covering!)

During the second world war there was, especially in Britain, a very active salvage drive for paper. This meant that large quantities of old books, both in manuscript (for example, books of accounts) and printed form, were pulped in order to keep up the manufacture of paper. There was not time to sift the wastepaper—and anyway the experts were mostly otherwise engaged elsewhere. In this way, irreparable gaps were created in accounting history source material.

Today we have, in many parts of the world, recycling programs; again there is a danger of valuable material being lost. But now accounting historians are more numerous and they are alert to the wisdom of selecting that small proportion which should be retained for study from the material being thrown out. Recycling should be continued but such screening would cause no appreciable loss and a gain could be achieved for accounting history. Before a batch of business records is scheduled for recycling, it should be automatic for the owner or custodian to inform someone able to select what is of historical value, not only a librarian or museum keeper but also an accountant, who could at least put in touch an appropriate researcher. But action must be taken quickly.

The question of confidentiality arises if the manuscripts are fairly recent. This may be solved by advising the owner to donate them to an institution, with limited access, or for future use only, or even to "reserve" them for a stated period. Another difficulty may be that the owner, even when he has agreed that the records should be retained, may stipulate that they be placed in a local institution, which may or may not be geared to material of this kind. In such a case advice may be welcomed from an accountant.

There are very full archives in existence of some of the older manuscripts, for instance the Datini accounts in Prato in Italy. There are also probably large quantities of business records of the more

recent past, mostly inaccessible. Preservation of really old documents is so highly specialized that it would always be necessary to place them in the hands of experts.

Repair the damage—

An example of what can be done with fragile pages is the preservation of a brittle, half-burned page with writing on both sides, which was placed in a frame of paper whose inner edges had been cut to fit the charred edges of the original page. Then the whole was sandwiched in thin tissue and heat-bonded together for a few seconds in an oven, so that it can be freely handled and bound into a book. It cannot be torn.

Some pages may be washed and hung up to dry, after having been made nonporous by an application of size. They may be mended by pasting on translucent tissue, which could be very thin silk. Self-sticking tape is not good for this purpose: in time it deteriorates and breaks and mars the page. If a page has become detached it can be bound into the gutter of a book (inside of the spine) by its inner edge being pasted on both sides into a guard, a strip of strong paper folded vertically which is sewn to the spine inside.

Pages affected by moisture can be made non-porous and strengthened in similar ways, but of course writing that has been made illegible by damage cannot be restored, though when the page can be handled and studied closely, historians can sometimes make inspired guesses.

Then tame it—

Once the material has been safeguarded from destruction, whether within a larger collection or on its own, it needs to be catalogued and stored—catalogued to make it known and to “fix” it (here illustrations are a great help), stored in a form which makes it easily accessible to researchers. The more publicity it receives the better, whether by articles or news items in local newspapers, a television interview, or mention in learned journals. A published catalogue, or even a handlist, is more useful in this respect than a card index (though the two may be combined by photographing down the cards). Another idea is a local exhibition of business archives, with expert captions for the exhibits. This could provide another route towards a published explanatory catalogue.

Another means of “fixing” a collection of early manuscripts is to have them transcribed into typescript or type, and translated, if

necessary. This could mean calling in other experts, not only in language but in handwriting. Some of the older manuscripts are easier to read than later ones, since the early writing is by professional scribes, practically the only people who could write at the time. They had a certain uniformity of style and a system of abbreviations. However, only the wealthier cities (of which Edinburgh was not one, in the 16th century) could afford a professional scribe for their municipal accounts.

In later centuries—say the 17th in Scotland and England—literacy had spread to Thomas, Richard and Henry (though not yet to Tom, Dick and Harry), and the more familiar they became with writing the more cursive and fast their handwriting grew, and the more idiosyncratic or even careless they became. Spelling was anything but consistent.

The classical order of the 18th century, with the rise of the writing-masters and calligraphers, brought an improvement in legibility, and similar progressions apply to many other countries.

COMPANY ACCOUNTS

A few years ago a collection of company accounts (financial statements of corporations) was started by the Scottish Institute. Major industrial concerns were circularized and invited to send annually a complimentary copy of their annual report and accounts, with, in the first instance, accounts of as many previous years as they cared to contribute. Most companies complied handsomely. One company sent an unbroken sequence of 93 years' accounts, and several sent sets covering 50 to 70 years, a number 25 years upwards. Some companies very kindly filled gaps with photocopies of unique documents.

Among the benefits of collecting company accounts are that such a collection is easily maintained and takes up little space, though it needs strong shelves to support the weight. A collection of company accounts would lend itself well to microfilming. Some of the Scottish Institute's company account archives have been out on extended loan for research, and they also have been consulted from time to time.

Amalgamations of long-established accountancy or legal firms can bring interesting records to light. Business bankruptcies, liquidations and mergers should all make the noses of accounting historians twitch in anticipation. Official bodies have been set up to help preserve business records: in Britain there are the Business

Archives Council (which covers England and Wales) and the Business Archives Council for Scotland. The Chairman of the Scottish body, Mr. R. C. Smith, is a member of The Institute of Chartered Accountants of Scotland and also sits on the Institute's Scottish Committee on Accounting History.

Printed Books

For accounting history studies in general more source material has been printed than is available in manuscript.

Book-hunting

Acquisition of this kind of accounting history source material is most likely to be by purchase, though bequests and donations of books are made to libraries from time to time. The book auction scene is becoming more and more difficult, even for the average institutional buyer. This is a sport that is rapidly becoming too expensive for the individual, though there are still some possibilities.

Inflation is doubly to blame, first by pushing up the prices, and second by creating an "artificial" demand for old books—and other antiques—as a form of inflation-proof investment. Annual book auction records chart the value of books as investments. In the Scottish Institute's Collection there is a Portuguese book dated 1722 in fine condition, which cost £ 70 in 1968: a second copy was sold four years later, by the same auction house in London, for £ 290. There is also an excellent example of the 2nd edition of Pacioli's *Summa de Arithmetica*, printed in Italy in 1523, which was bought for £ 2 in 1904 (say 3 dollars and 50 cents today).

The catalogues for book sales at the great auction houses in London, New York, Amsterdam and several other cities are models of their kind and most informative on rare books. So are the occasional catalogues issued by specialist bookshops in, for example, Amsterdam and Florence, Copenhagen and Brussels, London and elsewhere in the U.K. One can learn quite a lot by merely browsing through these catalogues.

Browsing, whether in antiquarian, or just second-hand bookshops, at sales or in libraries themselves, is often productive, provided the browser has expert knowledge and develops that sixth sense that leads to a "find"—a status which, once conferred on a book, usually prevents its destruction, even if it has calligraphic drawings that might attract the print collector. Unfortunately browsing is also

one of the slowest ways of unearthing the more obscure accounting history texts.

In recent years some texts which had been out of print for a long time have been reprinted commercially, on one or other side of the Atlantic (the Academy of Accounting Historians has initiated some of these reprints). Many still older texts have been microfilmed commercially. Photocopies can be feasibly made of some individual books. A certain amount of inter-library, and even international, lending is in operation. In Britain it is centered in the British Library, at Boston Spa in Lincolnshire, England.

Thus it is comparatively easy to get a copy, in one form or another, of a fairly wide range of works not located within reach. There is, of course, no adequate substitute for actually handling the original, and possibly variants of it, and examining it in the context of other editions or other works in a collection.

Isolated books may be useful, and even valuable, but they gain greatly from being incorporated in a group of similar items—and so, a collection is begun. Once begun, it never really ends; otherwise it becomes a fossil.

The care and maintenance of old books

The preservation of printed books shares some of the problems of manuscripts, in that clean, fresh air; exclusion of light, and especially sunlight; an even temperature; low humidity; and an absence of pests have not always obtained in the past. Some of the ravages of bad conditions, such as wormholes, cracked or broken joints (hinges), or pulverized leather covers, cannot be undone. The damage may have been inevitable, as in the decomposition, many years later, of calf leather bindings tanned during a certain period (1880 to 1890) when an unfortunate change was made—in Britain, at least—in the chemicals used in the process. In general, leather tanned before 1800 is more durable than the later product.

Another hazard, from the mid-19th century, was exposure to the fumes from gaslight. This was comparable to the pollution of today's petrol fumes. To cope with today's risks the best answer is to keep city collections away from open windows and in closed bookcases, though possibly with airholes. Better still, they should be in an air-filtered and conditioned atmosphere, with closed windows and in the shade.

Books that contain active mold, due to damp, should be ruthlessly segregated, or even photocopied and destroyed if their intrinsic

value is small. Too much trust should not be placed in remedies for this contagious condition.

However, joints can be repaired with new leather, insects can be fumigated out, loose or torn pages can be mended, or the whole book can be rebound. It is generally better to retain the original binding where possible, but new joints and perhaps a new leather title label are a good compromise, and less expensive.

Contrary to some opinions, handling old books is, within reason, good for them. Some of the natural skin oil is transferred to the leather cover; the joints are kept flexible; with less risk of their becoming so brittle that they suddenly break; and the paper gets an airing.

Since it is the absorption of sulphur from the atmosphere that damages bindings most, in particular on the spine, as the sides are normally partially protected by being up against neighboring books, cleaning the books can help preserve them. Once the leather has started disintegrating into powder, however, nothing will stop the decay.

Before that stage is reached, a leather-bound book may be washed, with saddle-soap and water, dried, and sponged with a solution of potassium lactate, to reduce the acid content and increase the alkaline content of the leather. Afterwards it can be refurbished with a leather dressing. British Museum Leather Dressing, which includes lanolin and beeswax among its ingredients, is much used in the U.K. (though not on suede leather). The recipe is in a little book, *The Preservation of Leather Bookbindings*, by H. Plenderleith, published by the British Museum, in London, in several editions since 1947, the last in 1970.

One of the best texts on this subject is *Cleaning and Preserving Bindings and Related Materials*, by Carolyn Horton, published (2nd edition, 1969) by the American Library Association, Chicago. This is a well-illustrated book, or large pamphlet, intended for those who are not skilled in its subject, but advising when an expert binder should be called in. It has a useful bibliography and lists trade names of materials and suppliers on both sides of the Atlantic. Mrs. Horton was one of the international team of experts who helped to restore a million books in the Biblioteca Nazionale in Florence, after the floods in Italy in 1966. She is not entirely in favor of the British Museum dressing, preferring one of the formulas proposed by Rogers and Beebe, in their leaflet, *Leather Bookbindings*, published by the U.S. Department of Agriculture, in Washington, D.C., in 1956. A more detailed and specialized book is *The Restoration of Leather*

Bindings by B. C. Middleton, published (1972) by the American Library Association, Chicago.

Cloth and vellum bindings may be cleaned with a soft rubber eraser, and additionally vellum may be washed with milk and then wiped with water.

The results of processing books in these ways can be dramatic and lasting. After a week, several years ago, in which the Scottish Institute's Collection was "invaded" by two of the binder's employees, it was actually possible to read the titles on the spines of most of the books and to realize what colors the covers really were.

The vellum, from being dark gray, became creamy white, and its surface was restored. This substance is hygroscopic and is therefore apt to warp according to changes in the humidity. For this reason, it is sensible to renew, if necessary, the leather ties usually provided on the front edges of a vellum-bound book, so as to keep it from springing open.

The Follow Through

Finally, there is the effect of documentation in the preserving of sources intact. It is here that the accounting historian has the biggest part to play: the better documented a book is, the less likely that it will be thrown away. A logical stage further than descriptive writing about source material is research into its background, relating it to its historical context, finding references to it in the literature, and constructing well-authenticated theories about it, all activities which might well be fitted into current research projects. Bibliographies about such material form a first step in this process, especially when they include locations.

A typical bibliography is the first publication of the Scottish Committee on Accounting History:—*Accounting in Scotland: a historical bibliography*, compiled by Janet Pryce-Jones and annotated by Professor R. H. Parker, which first appeared in 1974. A second edition, with over 300 more location entries, many in the U.S., was published in 1976. This book lists and locates books on accounting published in Scotland from 1683 (the earliest) to 1920. It was closely followed in 1976 by *An Accountants' Book Collection 1494-1930*, the third edition of the catalogue of the Antiquarian Collection of The Institute of Chartered Accountants of Scotland, which has nearly 1,000 entries and over 60 illustrations. It is arranged alphabetically, with a chronological index and an introduction.

Richard Brown, a Scottish chartered accountant active in Edinburgh from 90 to 60 years ago, was a pioneer in accounting history; he not only collected the nucleus of the Scottish Institute's present Collection, but also searched the literature in order to plan the Collection and began to document it after it was put together. Bibliographies available to him were few: in contrast today there are many, and there are also location lists, both of books and of collections, though there is plenty of room for more.

Already there is at least one computerized bibliography for accounting history: Professor G. J. Previts has been extracting the pre-1900 books on accounting from the Library of Congress National Union Catalogue. One day, perhaps this bibliography will be combined with others to form an international bibliography, incorporating holdings and locations in several countries.

It all comes down to the fact that what someone values for itself becomes valuable in the eyes of the world, and so is worth preserving. One of the Oxford English Dictionary's definitions of "preservation" is "keeping alive", and this is the meaning that will appeal most to accounting historians.

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THE EVOLUTION OF BUDGETARY ACCOUNTING THEORY AND PRACTICE IN MUNICIPAL ACCOUNTING FROM 1870

Introduction

A distinctive characteristic of governmental accounting is the requirement to demonstrate compliance with legal restrictions concerning control of revenues and expenditures. In fact, control or budgetary accounts must be integrated into a governmental unit's system of accounts. The National Committee on Governmental Accounting considers the budget and its accompanying control features of such significance that its third principle states:

“An annual budget should be adopted by every governmental unit whether required by law or not, and the accounting system should provide budgetary control over general government revenues and expenditures.”¹

The practices of opening budgetary accounts at the beginning of each fiscal year and of closing these accounts at the end of each fiscal year and the integration of the budgetary accounts with the proprietary accounts during the year are almost universally accepted in modern governmental accounting.

This paper briefly discusses the highlights of the evolution of budgetary accounting from approximately 1870. No attempt was made to deal with the evolution of budgetary accounting prior to this period.

Emphasis on the Need for Budgetary Accounts

The first published work describing the double-entry bookkeeping system and providing insight into the reasoning process supporting the accounting records was published in 1494 by Luca Pacioli in Venice. Around 1870 Michele Riva and Guisepppe Cerboni developed a method which incorporated the budgetary accounts in the accounting system. Interestingly, the credit for the development of

logismography—a quadruple entry system—is also an Italian contribution.

A distinguishing characteristic of municipal accounting began during this era with the development of separate proprietary and budgetary accounts. Michele Riva, the accountant for the municipality of Ferrara, had set himself the task of proving the inapplicability of double entry to all phases of government finances. Government had two functions, according to Riva: the legislative, concerned with creating the budget and determining the sources of revenue, and the executive, concerned with collecting revenue and authorizing the disbursements voted in the budget. Riva believed the state needed two types of bookkeeping: one for purposes of the budget and all the rights and duties it gives rise to; the other for control of receipts and disbursements.²

In 1872 Guisepppe Cerboni published his work on logismography. As administrative director of the war ministry, Cerboni immediately applied his system to its activities. Cerboni convinced the Italian legislature of the efficacy of his system with respect to solving the difficulties of governmental bookkeeping. In 1876 Cerboni was appointed Accountant General of Italy. He immediately extended the system to include all state accounting and thus, the three elements of governmental administration (budgeting, rights and duties entailed by the budget, and receipts and disbursements) were dovetailed into a single system of bookkeeping.³

According to Peragallo's interpretation of logismography, only two fundamental accounts with their subdivisions are required: the proprietor's account and the account which groups together debtors, creditors and employees. Cerboni assumed that the interests of these two groups were unalterably opposed. In applying logismography to governmental bookkeeping, Cerboni changed the names of his two fundamental accounts to *state* and *govern*, for parliament with its legislative prerogatives and to the executive who executes the laws of the parliament, respectively.

Cerboni maintained that the state has the right to determine the budget and the government has the duty to accept it and carry it out. And when the budget is executed, the government has the right to have this fact acknowledged and the state has the duty to recognize it. Translated into bookkeeping terms, this means that when the budget is approved by the parliament, the state is credited and the government is debited for the sums appropriated in the budget, and that, when sums necessary to meet the budget are raised through taxation and disbursed according to the budget, the state is debited and the government credited.⁴

In Cerboni's system the general ledger, as it is conceived in double entry, is eliminated and in its place is substituted an enlarged journal. All transactions are classified into two groups. In the first are placed all transactions which either increase or diminish capital. In the second are placed all transactions which neither increase nor diminish capital. These latter transactions include the exchange of one asset for another or one liability for another, the elimination of a liability by surrender of an asset, or the acquisition of an asset by an increase in liabilities.

Logismography lasted as long as Cerboni remained in the post of Accountant General, and was dropped in 1893 for a system similar to double entry. While Cerboni's method was found to be too complicated to be maintained, he made an important contribution by recognizing the need for budgetary accounts in governmental accounting.

Developments to 1910

English accountants also considered the problem of dealing with the budget in the accounting system. Apparently, English thought had not progressed to the point where budgetary information was integrated into the bookkeeping scheme.

In an article published in 1887 S. Cooke recognized the need for control of expenditures and the necessity of keeping the cash outlays within the expected revenues and proposed a worksheet with the following headings to facilitate the preparation of the desired information:

- “Column 1 Estimated expenditures to end of current year
- Column 2 Expenditures to date
- Column 3 Amounts expended since date of last report
- Column 4 Balance available
- Column 5 Expenditures in excess of estimates.”⁵

Cooke explains the meaning of each column heading in the following manner:

- “Column 1 would show the estimated expenditures for the whole year.
- Column 2 would show the amount expended through the preceding month. This amount would be extracted from the general ledger.
- Column 3 would show the amounts expended in the current month. These amounts would be taken from bills presented for payment.

- Column 4 would show the balance available for the remainder of the year and would be obtained by subtracting the sum of Columns 2 and 3 from Column 1.
- Column 5 would show the excess of expenditures over the estimated revenues and would be obtained by subtracting Column 1 from the sum of Columns 2 and 3.”⁶

Cooke’s worksheet approach disclosed only a comparison of estimated and actual expenditures. Evidently, encumbrances were not considered in his approach. Since revenues were not explicitly mentioned by Cooke it seems reasonable to assume that estimated revenues and estimated expenditures were equal at the beginning of the fiscal year.

By the 1904-1908 period, there was trans-Atlantic dialogue with articles by accountants from the United States appearing in the British journal, *The Accountant*, and articles by British accountants appearing in the American publication, *The Journal of Accountancy*. In one such article, American Ernest Reckitt acknowledged that the legal subordination of the whole system of municipal accounting is detrimental to accounting for assets, liabilities and surplus of revenue over expense. Further, a corresponding laxity of methods existed with respect to the way appropriation accounts were kept.⁷

Reckitt explained at some length that an “appropriation fund” is not a fund at all in the sense of amounting to a segregation of money. Reckitt found it unfortunate that the emphasis in municipal accounting was primarily on fund records and only secondarily on assets and liabilities. Reckitt did not attempt to present in detail a method of appropriation accounting, but recommended the essentials of a system by listing the following points:

- “1) No appropriation account should be kept in the General Ledger, but a separate account should be kept to record the expenditures of each appropriation. The effect of this plan will be that until the close of the fiscal year the balance of the general fund will represent net revenues; and the ledger balances will in all cases represent either assets or liabilities in a manner similar to any mercantile or commercial concern.
- 2) An Appropriation Ledger and Journal should be kept and an account with each appropriation opened, each account to be credited with its respective appropria-

tion and charged each month with the total of the expenditures applicable to same.

- 3) The Appropriation Ledger, in order to balance within itself, should carry a "General Appropriation" Account which would be charged with the total appropriations and credited by the total monthly expenses."⁸

Reckitt's position was echoed by Ulman in an article published four years later:

"Revenue from taxation, licenses, interest, fines, permits, etc., is appropriated to the credit of the various departments or funds and when disbursed is charged against those departments or funds. Thus the account closes out and nothing remains to tell what the money went for Thus the appropriation account by affording a gravelike resting place for cash disbursements constitutes a serious evil in public life. It has hidden more official irregularities in the past than any other device known . . . except perhaps burning the books."⁹

Ulman urged the elimination of the appropriation accounts from the general ledger, thus allowing all revenues to be credited to accounts which show the sources from which they come and requiring expenditures to be charged to asset or expense accounts. Under Ulman's system posting to appropriation or fund ledgers would be made independently of the transaction postings in the general ledger. Clearly, the discussion centered on the question of the desirability of the integration of the appropriation accounts in the general ledger or on the maintenance of the appropriation accounts separately from the general ledger.

The review of the literature of the period shows that by 1908, municipal accounting thought had evolved to the point of requiring a system or systems utilizing both proprietary and budgetary accounts. Frederick Cleveland pointed this out when he said that, to obtain any degree of control, "it will be necessary to institute both a system of asset and liability accounts, and a general classification of income and expense accounts, in addition to the appropriation or fund accounts."¹⁰

Impact of New York City's Accounting System Revision

Probably the most significant single event lending impetus to the development of budgetary accounting in the United States was the

revision which began about 1906, in New York City's accounting system. At the time of the reorganization no records were maintained of open market orders or contract claims and no central accounting records of vouchers payable were kept. Warrants were charged to the various boroughs of the city, while control over expenditures could be exercised only on a departmental level.

A series of articles in 1909 by Harold D. Force, of the New York City Finance Department, provided an in-depth discussion of some of the accounting revisions made up to that time. The new system required the issuance of some original document, in advance of expenditure, for all classes of transactions except payrolls. Transactions were classified into four main divisions:

- 1) Open Market Orders
- 2) Contracts
- 3) Miscellaneous Claims
- 4) Payrolls.¹¹

Very likely, the most significant achievement of the revised system was the inclusion of a scheme of entries which afforded a major element of control against spending beyond the amounts appropriated. The New York reorganization incorporated basic elements of a comprehensive system into municipal accounting records. The inclusion of the proprietary and fund accounts and the recognition of encumbrances upon appropriations, constituted a milestone. While much improvement and refinement remained to be accomplished, future progress was made much more rapidly than in the past.

Exposition of the "Dual-System"

Within a year after Force's rather incomplete schematic of the New York City system, Frederick Cleveland published an outstanding demonstration and explanation of the importance of the budgetary accounts. Cleveland recognized that a municipal corporation has unique conditions not shared by private corporations. Because the citizenry has enfranchised it to acquire its resources through eminent domain and granted other powers of sovereignty, its agents are permitted to proceed only upon specific authorization.

To this end Cleveland suggested that the general ledger incorporate the following budgetary accounts:

"Budgetary Debit Accounts

- a) Estimated requirements
- b) Available balance (other than cash)
- Unapplied balance (net cash)

Budgetary Credit Accounts

- a) Authorizations to incur liabilities (unencumbered balance)
- b) Reserve for contracts
- c) Reserve for open market orders
- d) Other reserves
- e) Free and appropriable surplus"

Definitions of the above terms were as follows:

"Estimated requirements—A debit fund account for the purpose of showing the amounts of estimated revenue to meet obligations previously authorized. The account balance would be the difference between the estimates and the amounts actually accrued or collected.

Available balance (other than cash)—a debit account showing the amount of taxes levied accruing to the benefit of each fund or class of funds and which reduces the estimated requirements.

Unapplied balance (net cash)—a debit accounting showing the amount of cash available after deducting all obligations against the fund.

Authorizations to incur liabilities—a credit account which shows the balance unencumbered of all authorizations to incur liabilities. The administrative value of this account cannot be overestimated. If a fund cannot be overencumbered, it cannot be overspent.

Reserve for contracts, reserve for open market orders, other fund reserves—credit accounts which show basically the amount of encumbrances outstanding. The balance in these accounts would be the total amounts entered into less vouchers or warrants drawn for payment."¹²

While Cleveland's original examples were considerably more detailed and complex, the essence of the proposed system was evident. Basically, his "dual-system" required a complete general ledger for the budgetary accounts as well as a complete general ledger for the proprietary accounts. With few exceptions, each time a journal entry was made in the proprietary accounts a correspond-

ing entry would be made in the budgetary accounts. Perhaps the unique feature of his presentation was the statement of the budgetary accounts at the end of the fiscal period. From the context of his presentation it appears that the budgetary accounts would be carried over from period to period.

Cleveland's "dual-system" was perpetrated further in 1913 by the *Handbook of Municipal Accounting* published by the New York Bureau of Municipal Research. The accounting system promulgated in the *Handbook* was the generally accepted authority for the next fifteen years.

The *Handbook* treated estimated revenue as an asset. In discussing the budgetary account used to record the estimated requirements to meet budget authorizations the authors noted that a credit balance in the account at the end of year would indicate that expectations had been more than realized. A debit balance would indicate the converse and, assuming the full amount of appropriations had been expended or obligated, "must herefore be considered a prospective asset inasmuch as it must be provided for in the tax levy of the following year."¹³ This use supported the contention that budgetary accounts were not closed at the end of the fiscal period, but were carried forward from period to period.

First Movement Away from the "Dual-System"

Francis Oakey recognized the need for the inclusion of the budgetary accounts in the accounting system, but, unlike Cleveland and the Bureau, Oakey included the budgetary accounts in a format he called Statement of Resources and Obligations. The combination of the budgetary and proprietary accounts in one statement was a significant departure from generally accepted practice which materially affected later developments in municipal accounting.

Oakey justified the inclusion of the budgetary accounts in the statement on the basis that the administration of a fund must be based on a financial plan or program covering the fiscal period. Therefore, the accounts and reports relating to the financial condition of the fund must include all resources that are, or will be, available within the fiscal period as well as all obligations that are, or will be, incurred during the fiscal period. Given this position, the accounts and statements must include balances that are not yet assets reduced to possession or realization and obligations which do not as yet represent realized liabilities. Oakey's Statement of Resources and Obligations significantly increased an ad-

ministrator's potential for efficient management. The statement enabled financial executives to quickly determine liquidity at any given point in time and facilitated future planning. After making the case for the inclusion of the budgetary accounts, Oakey stated:

“Consequently, a consolidated statement of all fund resources and obligations does not represent the assets and liabilities of a government as a whole, and, except for budgetary purposes, is of no value as a basis of information because it is composed of elements that have either a very limited, or no, relation to each other.”¹⁴

While Oakey agreed that a Statement of the Resources and Obligations of a fund should include the budgetary accounts, his concept of a municipal balance sheet was strikingly different. The balance sheet of a government should not include the budgetary accounts, nor should it include any assets and liabilities representing the government's responsibility as custodian, agent or administrator.

The Advent of Current Treatment of Budgetary Accounts

Between 1926 and 1933 Lloyd Morey wrote two books on municipal accounting and published numerous articles. His writings covered the full range of municipal accounting, including the necessity for both budgetary and proprietary accounts in the municipal accounting scheme.

Morey held that the use of the dual system, requiring a complete double entry in the proprietary accounts and a corresponding double entry in the budgetary accounts, accomplished no real purpose. Such a system, according to Morey, resulted in an unnecessary duplication of accounting entries and a false showing of financial condition. Resources of a fund consist of its assets in hand and the resources expected to be realized during the fiscal period; the obligations of a fund consist of the actual liabilities and the obligations in the forms of orders and contracts outstanding. The excess of resources over obligations represent the sum available for further appropriations. No other figure of fund surplus, according to Morey, can be of significance for any purpose.

In municipal accounting literature, Morey's contained the first definitive statement with respect to the disposition of the budgetary accounts at the end of the period:

"At the end of a fiscal period, budget accounts are assumed to be closed and the balance sheet is, therefore, automatically reduced to accounts of real assets and liabilities."¹⁵

In 1926, Morey demonstrated his system for unifying the budgetary and proprietary accounts of each fund. The terminology suggested by Morey in this article bears a marked similarity to the terms used in current municipal accounting literature. For example, Morey's simplified scheme of journalizing employs such account titles as Estimated Revenues, Appropriations, Reserve for Encumbrances, and Unappropriated Estimated Surplus.¹⁶ In the interest of simplicity, Morey suggested that the accounts of Available, Balance, Unapplied Cash, Reserve for Temporary Loans, and others be dropped and the above accounts substituted in their places.

Under Morey's system all budgetary accounts except Unappropriated Surplus and Reserve for Encumbrances would be closed at the end of the fiscal period. Unappropriated surplus would be carried forward as "an obligation of the succeeding period."¹⁷ Nor did Morey's system include the Reserve for Encumbrances as part of the unappropriated surplus. With the exception of the "net revenue" approach—the inclusion of actual revenues and estimated revenues in one account and the charging of appropriations with expenditures—Morey's presentation was strikingly modern.

By 1934 Morey's system of budgetary accounting was supported by H. A. Finney and Carl Chatters. In his *Advanced Accounting* Finney followed Morey's "simplified" system, "which is recommended in preference to the somewhat older, and more involved, dual account system."¹⁸ Chatters' *Accounting Manual for Small Cities* also generally follows Morey's recommendations regarding the treatment of budgetary accounts.

Conclusion

This study shows that the evolution of budgetary accounting since 1870 has progressed through several well defined stages. Contrary to popular impression this evolution did not, like Topsy, "just grow." Rather, it was consciously and effectively directed by persons who articulated accounting systems which reflected their particular beliefs. At any given time existing systems were no more than the definitive statements of procedure by those who held a specific theory of municipal accounting systems.

Perhaps an important lesson for the future can be learned from Eldon Hendricksen:

“. . . In all disciplines, theories and concepts are developed in historical continuity. One thought leads to another. Where we are today depends in large part on where we were yesterday. In fact, many of the things we do are based on reasons no longer relevant; we have even lost sight of many of the reasons . . .”¹⁹

FOOTNOTES

- ¹National Committee on Governmental Accounting, p. 5.
- ²Peragallo, pp. 112-13.
- ³*Ibid.*, p. 113.
- ⁴*Ibid.*
- ⁵Cooke, p. 166.
- ⁶*Ibid.*
- ⁷Reckitt, p. 411.
- ⁸*Ibid.*, p. 413.
- ⁹Ulman, p. 270.
- ¹⁰Cleveland, “Municipal Credit and Accounting Reform,” p. 176.
- ¹¹Force, pp. 107-21.
- ¹²Cleveland, “Uses and Purpose of a Municipal General Ledger,” p. 402.
- ¹³*Handbook of Municipal Accounting*, p. 40.
- ¹⁴Oakey, p. 229.
- ¹⁵Morey, “Finding Correct Principles of Public Accounts,” pp. 151-59.
- ¹⁶Morey, “Fund and Proprietary Accounts in Governmental Accounting,” pp. 77.
- ¹⁷*Ibid.*, p. 38.
- ¹⁸Finney, p. 519.
- ¹⁹Hendricksen, p. 15.

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THE RECKONING BOARD AND TALLY STICK*

Two accounting aids of great importance for society in Sweden and Finland during the 17th, 18th and 19th centuries.

In a complete accounting system a distinction should be made between the following functions: proof, entry, control, systematisation and summary. During the same period of time that the art of writing was developed different technical aids to serve one or more of these accounting functions were invented. The most advanced of such aids is the present-day computer. However, let us turn back the clock for a moment and consider two aids of the simplest kind: the *reckoning board* and the *tally stick*.

The reckoning board

The reckoning board, also called a *memory* or *hole board*, was a board with a number of holes. There were two types of such board. The older type had 100 holes, arranged in 10 rows with 10 holes in each. This type of board was used with one peg which could be inserted into the holes consecutively from top to bottom to count from one to one hundred. The board was used as a memory aid when counting certain units as loads, sacks or barrels. The peg was moved forward one hole for every unit covered. At the end of the day or week it could then be seen how many units had been reckoned. The board was also used to record the number of units completed by workers engaged in piece-work. With the aid of the board a worker could keep a tally of the amount of work done and verify the wages paid to him. The memory board was also used in iron works to keep a record of the number of units received or delivered, for example, of firewood, ore, chalk, coal or pig iron.

A second type of board was more advanced. The holes were arranged in two or three vertical rows, each with ten holes and with a

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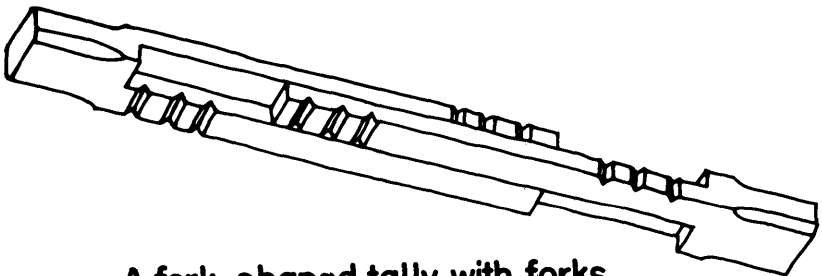
peg for each row. If there were two rows, the units were reckoned in the right row using that particular peg and the tens with the other peg in the second row. On a board with three rows, the row farthest to the left was used for recording the hundreds.

The reckoning board should not be confused with the *abacus*, used by the Romans. This was a reckoning aid, used to facilitate mathematical operations, while the reckoning board was a controlling aid. From this point of view the term memory board is a better name than reckoning board.

The period over which the memory board was used was almost certainly a very long one. Since it could not have required any great inventive mind to think up such a instrument, it is highly probable that its use goes back thousands of years. The strange thing is that it should still be used today. A board with two rows, for example, was in use in a cement factory in Finland as late as the 1930's to keep a record of the number of chalk wagons leaving the quarry. Even today the memory board is still used in workshops and glass factories in Finland.

The tally stick

The tally stick existed in two forms, the simple type and the divided type. Furthermore, there were two types of the latter, the double tally and the fork-shaped tally.



**A fork-shaped tally with forks
in entering position**

The simple tally had the same function as the memory board: to serve as an aid to the memory when counting or as a verification of work completed. It consisted of a stick in which a notch was cut for every unit counted or piece of work completed. It was also used, however, for verification in bookkeeping. For example, there is a 1662 Swedish decree¹ which says that the book-keepers on the Crown estates should verify the bailiffs' registers with the threshers' tally sticks.

The tally concept was also used on farms to keep a record of hay or other feedstuff taken into the barn in the autumn. For every load of hay brought in, a vertical notch was cut in one of the logs near the doorway. When the hay was taken out in the course of the winter an oblique horizontal notch was cut over each vertical one. It was consequently possible to know at any time how many loads of feedstuff remained in the barn.

This simple and practical method of recording stocks, which was a time-honoured custom, has been maintained in use in Finland up to the present. Such notches can still be seen and studied in old barns, showing how much feedstuff was taken in and out of the barns each year.

The invention of the double tally represented great progress in accounting techniques. The peg that was to be used as a tally after being correctly notched was split into two parts, one for each party to a contract (employer and employee, seller and buyer etc.). For later verification of the transaction the two halves were put together so that the notch cut across the peg was in exactly the same place on each half of the peg. If the tally was made out of a wood with a very clear grain, usually pine, it was furthermore impossible to falsify either half of the tally without detection. The grain in the wood served the same function as the watermark in today's paper money.

By splitting the tally it had become a means of proof. The notches in the tally provided evidence of each piece of work done. The tally's function as verification, even as acknowledgement of debt, can be seen in many documents (court registers and deeds) from the 17th and 18th centuries in Sweden and Finland.

The fork-shaped tally was an improvement on the double tally. It consisted of two forks cut from the same four-sided stick. The forks gripped each other when they were put together so that the two parts could be firmly held together. Because of their construction all four sides of the piece of wood could be notched whereas

only two sides could be used in the case of the double tally. The fork-shaped tally had more uses than the double tally: for example, there were two sides which could be used for noting debits in *daler* and *öre* and two for crediting *daler* and *öre*. Such a tally therefore could have the same function as an account in book-keeping.

It was the high degree of illiteracy that gave rise to the use of the double tally. This is clear from a Swedish decree for smithies dating from the year 1703.² It says that those smiths who could not read or write must maintain a tally. Accounts were to be settled twice a year on the basis of the tally and thereafter noted in the factory's book-keeping.

It can be seen from this decree that the tally also served as an initial entry in book-keeping. Instead of noting every separate transaction in the company's books, an account was kept using a tally and the summarized totals entered in the book every six months. Thus the double tally fulfilled three of the functions of a complete accounting system as given at the beginning: it served as a means of proof, as an entry and as a control. The remarkable thing is that the tally served as a means of proof, a function the modern computer cannot perform.

The double tally was not only used in factories but also in commerce and foreign trade. It has been proved that the Hanseatic merchants used tallies. A tally is mentioned in an account-book which belonged to Helmick Ficke from Tallin, who had business contacts with Sweden and Finland in the early 16th century.³ It was in all probability they who introduced the tally idea to Scandinavia. An indication of this is that the Swedish name for tally, *karvstock*, probably originates from the German *Kerbstock*.

The tally has continued in use in Scandinavia century after century almost up to the present time. And it was certainly no rare tool. This is shown by the fact that it is also mentioned in a metaphorical sense. If it was said that somebody had a full tally, it meant that he had done a lot of work, achieved a lot. And even today in Finland one says "the days work is in the stick", when the work for the day is finished. In some places even an employee's work schedule is called a tally stick.

In German this metaphorical sense of tally stick is still in use, although in a negative sense. For example one can say about a person who has a lot on his conscience: "*Er hat viel auf dem Kerbholtz*", "he has much in his tally". In such a case the matter is seen from the debtor's point of view.

In this day and age of the computer we are perhaps tempted to underestimate the importance of the tally in past centuries. But that is a mistake. The tally stick was of tremendous importance and it is well to bear this in mind when computers are in such wide use for accounting purposes. An accounting aid, simple and practical, and in use for many hundreds of years in agriculture, forestry, mining, in smithies and iron works, in shipping, trade and commerce, and for administering justice is well worth serious consideration and our respectful admiration.

FOOTNOTES

¹Kammarkollegiets, p. 432.

²von-Stiernman, p. 927.

³Mickwitz, p. 32.

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Williard E. Stone
PROFESSOR OF ACCOUNTING
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MANAGERIAL ACCOUNTING ON THE U.S. 1758 FRONTIER

Colonel Henry Bouquet, a British officer, was second in command to Brigadier General John Forbes in the 1758 campaign against the French in western Pennsylvania. Colonel George Washington served under him as commander of the Virginia companies which took part in the Forbes expedition. Bouquet was an excellent organizer and played a leading role in the Forbes expedition which captured Fort Duquesne (later renamed Pittsburgh) from the French in 1758 and constructed the Forbes Road from Philadelphia to Pittsburgh over the Allegheny Mountains and secured it with frontier posts along the line of communications.

Although much of his work dealt with military strategy an even greater portion concerned the construction of the road and posts and the victualling of the troops under his command. In meeting these demands Bouquet displayed a knowledge of accounting and internal control. His use of management accounting is well demonstrated by the cost studies which he had prepared. He requested forecasts of the cost of transportation (alternative costs for use of wagons or canoes were estimated) and for other projects. One of the most interesting was the calculation of the expense for Indian warriors. The cost of "fitting them out and rewarding them for their services for the expedition exclusive of extraordinary encouragements to be occasionally given for their good behavior taking scalps and prisoners. . . ." was:

"Calculation of Expenses for Indian Warriors

5 Stroud Mantles @ 20/each	5	0	0
1 Pair Stockings or Legings	0	3	9
2 Knives	0	2	0
1 Shirt and Flap or Britch Clout	0	11	3

All information for this paper was taken from *The Papers of Henry Bouquet, Vol. II, The Forbes Expedition*, Stevens, S. K., Kent, D. H., and Leonard, A. L., Editors, Harrisburg, The Pennsylvania Historical and Museum Commission, 1951.

Silver Truck, Wampum, Gartering, Vermillian, etc.	3	0	0
	8	17	0
Necessaries to equip them for service	1	10	0
	10	7	0"

His knowledge of the principles of internal control is well demonstrated by the instructions given in his orderly book for controlling the tools used in the campaign. A "storehouse" was set up at convenient locations with an officer in charge who had a soldier in actual control of the store. When tools were received the officer signed a receipt accepting responsibility. Officers were held strictly accountable as the field orders for August 12, 1758 disclose:

"The tools lost are to be paid for to Lieutenant Lyon, Acting Commissary for the Things Stores by the officers who have given their receipts for them."²

Tools were inventoried periodically as the field orders of August 4, 1758 provide:

"All of the tools including artificers Laborers Hatchet Men of the Pennsylvania and Virginia Troops are to be returned to the Stores before 12 O'Clock, and none to be kept under any pretence whatever. The commanding officer of each corps are desired to have an exact research made of the said tools and will be answerable for the execution of this order."³

The inventory for store #7 at Drowning Creek was:⁴

Axes	16	Shovels	12
Spades	6	Grubbing Axes	8

Labor costs were also carefully controlled. In a letter to Captain Gordon, Bouquet specified: "Mr. Lyons must have the list of all the Trades men you employ, and pay them every Saturday upon your certificate."⁵ Gordon replied that he would have the lists "certified by the Sub-Engineers and Overseers and the payment ordered by me at the bottom."⁶

Another interesting commercial aspect of Colonel Bouquet's military functions was the licensing and control of civilian merchants, known as suttlers who followed the army into the frontier to es-

establish trading posts at the new forts. The contract form used by Bouquet was:

“By Henry Bouquet Esq. Colonel in the Royal American Regiment, and Commanding His Majesty’s Forces at
.....

To

Whereas it is for the good of His Majesty’s Service that a certain number of well regulated Merchants and Suttlers, be allowed to follow the Army on the Western Expedition. This is, therefore, to permit you to attend the Said Troops for this Campaign, to furnish them with Dry Goods and Liquors, under Such Orders and Regulations as shall be issued from time to time by the General or Commander in Chief for the time being. And you are hereby forbid to sell or give, or knowingly Suffer to be sold or given, any kind of Spirits, or other Strong Liquors, to any Indians, on any pretence whatever. And no Soldier, or Woman belonging to the Army, is to have any Spirits or other Strong Liquors from you, without Leave in writing from the Commanding Officer of the Regiment they belong to. On pain of your being plunder’d and turn’d out of the Army. You are permitted to have with you Waggons and Horses/maintaining them at your own Expense. And you are to be Subject to Military Discipline so long as you enjoy the benefit of this License.

Given under my Hand at the Day of 1758”.⁷

As the license indicated the “suttlers” were under strict army control. Bouquet established price ceilings for the commodities supplied by the merchants and in his schedule made allowance for the distance the goods had to be transported. The official price list is interesting both to indicate the type of commodities popular with the soldiers and camp followers and as an indication of early colonial prices.

**“Rates and Prices Settled upon Sutlers Goods at Rays Town
by Order of Col. Bouquet Commanding Officer
August 10, 1758**

<i>Sundry Articles</i>	<i>Prices at Rays Town</i>	<i>Prices at Loyal Hannon</i>	<i>Prices at the Ohio</i>	
Madeira Wine	18/p Gallon	20/p Gallon	22/p Gallon	
Vidonia D°	11/ .. D° ..	11/ .. D° ..	12/ .. D° ..	
West India Rum	10/ .. D° ..	11/6 ^d D° or 5 ^d p Gill ..	13/ .. D° or 6 ^d p Gill ..	
Spirits	12/ .. D° ..	13/ .. D° ..	15/ .. D° ..	Dry Goods 25 p c at Rays- Town Allow- ing 4 ^d p ^r lb for Carriage to Rays-Town 50 p C ^t at Loyal Hannon 75/ at the Ohio, upon the Original Invoices and all Charges to Rays-Town.
Shrub	27/ .. D° ..	30/ .. D° ..	33/ .. D° ..	
Shrub Punch	2/ for 3 pints	2/3 for 3 pints	3/ for 3 pints	
Fruit D° D° D° D° ..	
Sangoree D° D° D° ..	
Mim	1/3 for 3 pints	1/ ..	1/10 .. D° ..	
Cordials	
Single Refin'd Sugar	2/p Pound	2/3 p Pound	2/6 p ^r lb	
Brown D°	1/3 .. D° ..	1.6 .. D° ..	1/9 .. D° ..	
Hard Soap	1/4 .. D° ..	1/7 .. D° ..	1/10 .. D° ..	
Tamarinds	2/ ... D° ..	2/3 .. D° ..	2/6 .. D° ..	
Candles	1/6 .. D° ..	1/9 .. D° ..	2/ ... D° ..	All the Sut- lers to pro- vide Dinner & Suppers for the Officers of the Corps to which they belong, they giving in their Rations & paying 6 ^d p ^r day for Cooking also Paying for what Liquors they drink.
Shoes	8/ p ^r pair	9/ p ^r pair	10/ p ^r pair	
English Cheese	1/6 p ^r lb	1/9 p ^r lb	2/ p ^r lb	
Chocolate	2/6 .. D° ..	2/10 .. D° ..	3/2 .. D° ..	
Coffee	1/8 .. D° ..	1/11 .. D° ..	2/2 .. D° ..	
Bohea Tea	12/ .. D° ..	13/ .. D° ..	14/ .. D° ..	
Wyting Paper	2/ p ^r Quire	2/3 p ^r Quire	2/6 p ^r Quire	
Pepper	5/ p ^r lb	5/6 p ^r lb	6/ p ^r lb	
Wine Vinegar	10/p ^r Gallon	12/ p ^r Gallon	15/ p ^r Gallon	
Mustard	1/9p ^r Bottle	2/ p Bottle	2/3 p Bottle	
Sallad Oyl	5/ p Bottle	6/ .. D° ..	7/ ... D° ..	
Cyder Vinegar	3/ p ^r Gallon	4/ p ^r Gallon	5/ p ^r Gallon	
Indian Blankets	20/ ..	22/ ..	25/ ..	
Match Coats	15/ ..	17/ ..	20/ ..	
Oznabrigs	
Pigtail Tobacco	1/6 p lb ...	1/9 p lb ...	2/ p lb ...	Camp at Rays-Town 15th Aug ^t 1758.
Leaf ... D° ...	9 ^d ... D° ..	1/ ... D° ..	1/3 .. D° ..	
Prick ... D° ...	9 ^d ... D° ..	1/ ... D° ..	1/3 .. D° ..	

<i>Sundry Articles</i>	<i>Prices at Rays Town</i>	<i>Prices at Loyal Hannon</i>	<i>Prices at the Ohio</i>	
Butter	1/3 .. D° ..	1/6 .. D° ..	2/ ... D° ..	Sign'd, James Burd 2 ^d B: P: R: Presid ^t & Approv'd by me Henry Bouquet "8
Gammons	1/1 .. D° ..	1.3 .. D° ..	1/6 .. D° ..	
Smoak'd Beef	1/ ... D° ..	1/ ... D° ..	1/3 .. D° ..	
Dry'd Neats Tongues	1/ ... D° ..	1/3 .. D° ..	1/6 .. D° ..	
American Cheese	10 ^d .. D° ..	1/ ... D° ..	1/3 .. D° ..	
Whiskey	5/ p ^r Gallon	6/6p ^r Gallon	8/ p ^r Gallon	
American Rum	5/ ... D° ..	6/6 .. D° ..	8/ ... D° ..	

Colonel Henry Bouquet is held to have been one of the most efficient and successful British officers of the colonial period. His outstanding ability as an organizer is well illustrated by his use of surprisingly modern accounting concepts. He would have made an excellent accountant.

FOOTNOTES

¹p. 260.²p. 676.³p. 671.⁴p. 321.⁵p. 156.⁶p. 157.⁷p. 114.⁸p. 352-353. (note: D° signifies ditto)

Kenneth O. Elvik, Editor
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BOOK REVIEWS

Rollo G. Silver, *Publishing in Boston, 1726-57, The Accounts of Daniel Henschman* (Charlottesville, Virginia: The University Press of Virginia, 1976, 21 pp. paper, \$3.00)

Reviewed by William Holmes
Peat, Marwick, Mitchell & Co.

The accounting historian looking at old accounts has the advantage of two points of view. On the one hand, he is interested in the level of accounting techniques employed, and hopeful in this regard of finding something unique or ahead of its time; on the other hand he is looking at the content of the accounts, searching for information that will add to knowledge of contemporary social and business practices. If he is very lucky, he may on occasion find both.

Publishing in Boston, 1726-57, The Accounts of Daniel Henschman offers no sophisticated accounting techniques; or at least not directly so. However, it is an excellent example of extracting the last drop of useful information from a few simple accounts and putting it to work to portray the daily round of a busy Colonial publisher in his dealings with his paper manufacturers, printers, and bookbinders. We see him grappling with cost and break-even problems, with setting rational mark-on margins during periods of severe inflation, and with a chronic shortage of ready cash. It all sounds vaguely similar to something we read in last week's *Business Week* or *Barrons*. Business acumen is obviously not the prerogative of the 20th Century.

All in all, a fascinating glimpse of an early Colonial businessman.

New England is a goldmine of such records tucked away in state and town archives, in museums, and local historical societies, for the most part untouched by accounting historians. We badly need some latter day accounting "forty-niners" to carry on the good work and do a lot of digging. Mr. Silver has shown what can be done.

Anthony J. Gambino and John R. Palmer, *Management Accounting in Colonial America* (New York, National Association of Accountants, 1976, 40 pp., paper \$2.95).

**Reviewed by Edward N. Coffman
Virginia Commonwealth University**

This book consists of an examination of accounting practices in Colonial America and a consideration of the role of accounting in the management of business from the early 17th to the late 18th century. The book is divided into three primary sections.

The first section of the book (pp. 3-6) describes the business or economic environment that existed in Colonial America, including a discussion of the types of monetary units used in exchange transactions. Information in this section provides a valuable framework or setting for the contents of the latter sections of the book.

Most of the nonagricultural businesses in Colonial America were operated by merchants. Section two (pp. 7-15) provides a discussion, along with appropriate illustrations, of the accounting techniques and financial books used by merchants in managing their financial affairs. Two classes of financial books are discussed: A. General Books—(1) waste book or memorial, (2) journal, or in lieu of these two a daybook, and (3) a ledger; B. Subsidiary Books—(1) letter book, (2) invoice book, and (3) warehouse of tobacco book.

Section three (pp. 17-30) examines early developments in industrial or cost accounting. It also provides illustrations of how accounting information was used by industrialists of Colonial America, to segregate and accumulate costs, control production, and reduce waste in such industries as shipbuilding, nailery manufacturing and iron manufacturing, in particular. Reference was also made to accounting techniques used in the joint venture type of organization.

The book is interesting reading and it contains a valuable bibliography (pp. 37-40). It is, however, based largely on secondary sources and the discussions and illustrations are brief and limited in scope. The book does, as intended by the authors, provide insight into an area of historical development of accounting that has basically neglected in the past, and it establishes the basis for an expanded and more in-depth examination of this area of accounting history. For additional comments concerning this book, refer to an article based on its contents entitled "American Accounting Practices—CIRCA 1776" which appeared in the June, 1976 issue of *Management Accounting* (pp. 53-56).

An Accountants' Book Collection 1494-1930, Catalogue of the Antiquarian Collection of the Institute of Chartered Accountants of Scotland. Third edition. With an introduction by Anna B. G. Dunlop, M.A., Dip.Ed., A.L.A., Keeper of the Antiquarian Collection. (Edinburgh: The Institute of Chartered Accountants of Scotland, 1976, pp. xviii, 113, £ 3.50).

Reviewed by Maureen H. Berry
The University of Illinois

This book describes the antiquarian collection of the Institute of Chartered Accountants of Scotland and is organized into three sections: an introduction by the keeper of the collection, Ms. Anna Dunlop; a listing of the main entries in the catalogue arranged alphabetically by author; and a chronological index.

The introduction contains a discussion of the history of the collection and a "bird's eye view" of some of its riches. We learn that the collection's founder was Richard Brown, an Edinburgh chartered accountant and accounting historian, well-known as the editor and part-author of *A History of Accounting and Accountants*, published in 1905. He began the collection about 1890, apparently purchasing directly from booksellers in Continental Europe, and by 1906 had acquired most of its more important and valuable works. Over the years additional volumes were donated and, in 1962, the antiquarian collection was catalogued separately for the first time. Subsequent acquisitions necessitated a second edition in 1968, followed by this third edition in 1976, containing entries chosen from almost 1,000 works. The sampling of the collection's contents abounds with illustrations. These include: finger signs for numbers, current in 1494; calculating with jettons (counters) and a counting-board; calligraphy; portraits; merchants' marks; and abstracts from title pages and page decorations.

All the works discussed in the narrative are contained in the collection. While the majority of them deal with accounting and book-keeping, there are a few on law, mathematics, and commercial arithmetic. We first focus on the countries of origin emphasized in successive centuries: Italy, Holland, Scotland, and England. We then go to examine their contributions. The earlier works include a first edition of Pacioli (1494) and a 1494 variant of the first edition, as well as a 1523 second edition. Writers who helped disseminate the methods of Pacioli described include Tagliente (1525), Schweiker (1549), Manzoni (1554), and Gottlieb (1592), but the dissenter, Cardan (1539), is not overlooked. The then widespread

phenomenon of thought-borrowing and plagiarism is illustrated with reproductions of identically-worded transactions from Petri (Amsterdam, 1605; earlier edition 1583), "W. P." (London, c. 1596), and Tap (London, 1613). Moving through the centuries, we turn, in contrast, to pioneering ideas, such as: the application of merchants' accounts to government accounting, Stevin (1605); monastery accounting, Flori (1636); the heading of account pages with account titles, Geossens (1654); a system of five accounts, Degranges (1816); and industrial accounting, Garcke and Fells (1893). Books on specialized topics include: estates, Snell (1718); shipping, Hayes (1731); and farm accounting, Munro (1812), and works on accounting for particular trades are well represented. Academics will be pleased to note that texts by schoolteachers are also highlighted. Among the familiar names are Mair (in many editions), Macghie (1718), and Hamilton (1788).

Ms. Dunlop's enthusiasm for her topic is evident from her writing style. The insights she offers convey an underlying wit and confident sense of communicating with a responsive audience. As an example, we quote from her comments about Edward T. Jones:

"His book, *Jones's English System of Book-keeping, by Single or Double Entry*, was translated into Danish, Dutch, French, German, Italian (!) and Russian. The Italian translation was made via the German one and no doubt suffered in the double process. Meantime Jones, and later his son Theodore, assiduously promoted several editions of his book in Britain, making a sizeable fortune from it, though not without some second thoughts. Italy struck back, notably in the melodramatic style of *Taddei; Il Ragioniere Perfetto* (Rome, 1839-43; 4 volumes), which attacked Jones's English system and predicted that, far from double entry sinking into ruinous rubble, it would rise again more majestically than ever. And indeed the reaffirmation of conventional double entry proved to be the long-term result of the Jones system." (p. xiv)

Our appetite whetted, we proceed to the main entries in the catalogue arranged, as we have mentioned, in alphabetical order by author. In most instances, the titles are sufficiently comprehensive to indicate the contents, a service which those interested in accounting research will certainly appreciate, as also the chronological index. The usefulness of the catalogue as a research tool would be enhanced, however, by a subject index. Under the present

arrangement, the scope and extent of accounting topics contained in the collection is not evident. This is not, however, to detract from the worth of the catalogue. The editors are to be congratulated on the choice and profusion of illustrations which, combined with the informative commentary, significantly add to the value of the book.

Stephen E. Loeb and Gordon S. May, *A History of Public Accounting in Maryland*, (Lutherville, Maryland: Maryland Association of Certified Public Accountants, Inc., 1976, 115 pp., \$9.32)

**Reviewed by Horace R. Givens
West Virginia University**

H. L. Mencken once refused to review a book because the author had omitted an index. This brief history of accounting in Maryland omits both an index and a table of contents and their lack is felt by the reader. Nevertheless, the book is of interest to the accounting historian as well as to the members of the Maryland Association of Certified Public Accountants. Loeb and May have followed the traditional chronological format common to such histories and have done a good job of reviewing old city directories for the names of accountants and bookkeepers making services available to the public before the formalization of the accounting profession in the early 20th century. By reference to such directories as well as materials such as Perine and Bickwit's *Accountants Directory* and *Who's Who*, they have obtained brief biographical data on many of the men responsible for the legal recognition of accountants in the state of Maryland.

A substantial portion of the book describes the evolution of the profession in Maryland after the passage of the first CPA law in 1900. This portion draws heavily upon the minutes of the state CPA society (organized in 1901) and deals with many familiar topics such as the problems of unlicensed practitioners, professional ethics and advertising, educational qualifications, the examination for certification and so forth. Accounting historians interested in the development of legislation for professional licensing will find the separate chapter dealing with this matter of value. The chapter abstracts pertinent sections of the various laws passed over the years and frequent reference is made to the minutes of the Maryland State Board of Accountancy.

The book also includes the usual listings of officers of the state society and a table showing the numbers of CPA certificates granted

each year. An index of names would have been of value to the historian, but the book is short enough to enable one to find what one needs with a minimum of lost time.

Ichiro Katano, *History of Bank Accounting in Japan* (Tokyo: Zenkoku Chiho Guinko Kyokai, 1976, pp. xxi, 270) [published in Japanese, English synopsis included]. Available from Dobun Kan Publishing Co., Tokyo.

**Reviewed by Yoshio Fujita
Wakayama University, Japan**

Why has Japan become the second most important economic power in the free world? The author of this book points out that one of the keys to answer this question lies in the establishment of a modern banking system in Japan.

Only a few years after the 1868 Revolution in Japan, she established a modern banking system and adopted double-entry book-keeping for this system, both of which had previously been completely unknown to her. This was done by the pioneer bank under the leadership of a young and able organization of bureaucrats and the guidance of Alexander Allen Shad, a staff member of the Yokohama branch of the Chartered Mercantile Bank of London, India, and China.

Acknowledging the contributions of his predecessors, and using original historical documents and data, the author describes and analyzes the process through which this change was accomplished so efficiently and rapidly. He also describes the process in which Japanese bank accounting developed towards the cash slip system integrated with the summarized posting journal and accompanied by a well-structured system of internal checks (Chs. 1, 2).

Since World War II Japan has instituted a series of major improvements in corporate accounting. The author himself has made several important proposals for these improvements. In order to establish a firm basis for his proposals, he undertook comprehensive historical research of all accounting methods and rules practiced in Japan over the past one hundred years.

He traces the contradiction between the periodic income statement and the earned surplus statement for disposal income to the initial Japanese bank accounting rule of 1873 (Chs. 1, 2, and pp. 129, 139). Since then, every major legislation and revision of accounting rules including the latest revision of bank accounting rules

of 1975, has failed to make true progress in resolving this problem. The author analyzes in detail this historical process (Chs. 3, 4, and 5).

However, the reason why the accountability function has not been fully accomplished in Japan is not explained. At least in regard to bank accounts this reviewer wants to point out that the examination of bank accounts conducted by the bureaucrat organization within the Ministry of Finance had played a far more important role in developing bank accounting rules than that conducted by any other agents. In this important respect the author's analysis is insufficient (pp. 34, 59, 120-126, 175, 176). More research is needed in the future to clarify the historical characteristics of social demands imposed on accounting in Japan.

Katano's present book together with an earlier work entitled, *Development of Corporate Financial Statements in Japan*, (Tokyo: Dobunkan, 1968, written in Japanese), nevertheless represent pioneering works on the history of modern accounting in Japan. Both books are of particular value not only for accountants, but also for economic historians, business historians, and sociologists, because they present an in-depth analysis of accounting history in Japan from 1872 to the present.

Hans Johnson, Editor
UNIVERSITY OF TEXAS AT SAN ANTONIO

DOCTORAL RESEARCH

Perspectives on the "Objectives of Financial Statements" (NYU, 1976, 336 pp.; 37/4, p. 2264-A*) by Robert Bloom examines "the historical, empirical, and the theoretical perspectives on the AICPA Study Report. . ." According to Bloom, "a study of the roots and antecedents of the Report should clarify the objectives identified in the Report, cast light on the Report's acceptability, and provide a broader framework for developing accounting theory." His thesis is that "the Report has substantial foundations and support in previous accounting literature, empirical research, and normative models." To test the thesis "twentieth-century American accounting writings are examined." The "theoretical foundations of the Report" are reviewed based upon an analysis "of selected theories and models from economics, finance, the behavioral sciences, and social law."

Bloom's research indicates that "in general, the objectives set forth in the Report are not really new," and "the extent of support for each objective varies considerably." Further, "neither the Study Group's nor the FASB's empirical research provide substantial backing, contrary to what was hypothesized, for most of the objectives presented in the Report." Economic income and discounted cash-flow models "furnish underpinnings for nearly all of the objectives" and "the 'right-to-know' theory provides implicit backing for each objective."

Bloom concludes that "although the Report is based upon historical thought in accounting, the empirical research conducted by the Study Group, and selected normative models, it does not develop a rigorous model for accounting objectives in terms of these foundations."

Robert M. Trueblood, CPA: The Consummate Professional (Georgia State U., 1976, 315 pp.; 37/4, p. 2264-A) by Roscoe Bryson analyzes and evaluates the "life and contributions" of the late partner of

*Volume/Number and page in *Dissertation Abstracts International*.

Touche & Ross. The author states that "this study dealt primarily with Trueblood's contributions to the growth of the accounting profession and to the development of accounting and auditing thought and practice in non-regulated industries." Research sources included "selected published and unpublished writings" of Trueblood, and interviews "held with many of his contemporaries." The dissertation reviews Trueblood's early life, his work as a practitioner and public servant, his efforts "to improve both education and practice," and "his efforts to improve financial reporting practices, particularly through his chairmanship of the Study Group on the Objectives of Financial Statements. . . ."

According to Bryson, "the conclusion shows how his achievements and ideas have left the profession with greater opportunities for service in the coming years."

Robert H. Montgomery: A Pioneer Leader of American Accounting (U. of Alabama, 1971, 368 pp.; 32/9, p. 4767-A) by Alfred Roberts provides an "insight into the personality" of the man, traces "his personal involvement in the development of professional accounting organizations," and evaluates "his influence on accounting literature." During his career which spanned the years 1889 to 1953, Montgomery was a founding partner of Coopers & Lybrand, a prolific author, a tax lawyer, and a "professor of accountancy at Columbia University." Roberts comments that "he was a man of exceptional ability who happened to have entered the field of accountancy at a point in time when it needed leadership and direction as it evolved to the status of a profession." And, "Robert H. Montgomery devoted his most productive years to guiding accounting from an obscure trade to the highly respected position that it occupies today."

A History of the Certified Public Accounting Profession in Louisiana (LSU, 1976, 143 pp.; 37/5, p. 2983-A) by Daniel Butler reviews the development of the profession in this state from 1908, the year the first CPA law was passed by the state legislature, to the present time.

A Critical Evaluation of Comparative Financial Accounting Thought in America 1900 to 1920 (U. of Florida, 1972, 273 pp.; 34/6, p. 2812-A) by Gary John Previts examines the writings of William Morse Cole, Arthur Lowes Dickinson, Paul-Joseph Esquerré, Henry Rand Hatfield, Roy Bernard Kester, Robert Heister Montgomery,

Charles Ezra Sprague and John Raymond Wildman which were presumed to be "representative of the leading thought of the age." These writers "significantly transformed" financial accounting in America. The years 1900 to 1920 are viewed as the "Preclassical period" due to the important influence the published works of these gentlemen had on "later (Classical) accounting theory." After a "colligatory examination of the life history of these individuals and the environment of the period, the theoretical research is divided between an analysis of Preclassical value theory and income determination theory." Previts' inquiry is "based upon the relationships existing among: (1) the triad (audit, advise and attest) of duties undertaken by Preclassical accountants; (2) the role of "professional" judgment in the joining of these duties with (3) the need for a set of fundamental precepts to underlie the discharge of accountants' professional functions." Further, "a comparative functional mode is employed in the inquiry, stressing the warrantability of notions in their initial definitional setting, with dialectical considerations added to achieve pre and post transformational perspective."

From his research Previts' concludes that "the essential principles of the profit determination and disclosure theories of the period can be traced to the doctrines and format found in Dickinson's 1904 address to the Congress of Accountants. . ." Dickinson's comments dealt with expense recognition, realized profits on sales of fixed assets, and capital maintenance.

Finally, the "signal contributions of Preclassical writers" are analyzed in terms of constituting a "School of Thought."

The Role of Accounting in the Economic Development of England: 1500 to 1750 (U. of Illinois, 1970, 400 pp.; 31/9, p. 4327-A) by James Ole Winjum tests the theory that "the system of double entry bookkeeping . . . was an active catalyst in the economic expansion that occurred in Europe following the close of the Middle Ages, both as an instrument for ordering of economic data, and in the role that it played in transforming medieval man's attitude toward economic life." Source material for the dissertation consisted of "published double entry treatises, including their illustrative accounting records, and the extant account books of individual merchants, partnerships and joint stock companies. . ."

Winjum's study reveals that "the system of double entry bookkeeping was developed and explained fully by even the earliest English authors of the mid-sixteenth century, and its exposition and illustration basically remained unchanged for the next two hundred

years." The extant account books lagged behind the contemporary textbooks "and often reveal little more than a desire on the part of the merchant to have a comprehensive and systematic record of his receivables and debts." But, "by the eighteenth century this situation had changed; the accounting records are clearer, were more conscientiously maintained, and reveal a greater awareness and utilization of double entry's ability. . ."

Winjum concludes that "scholars have been generally correct in assuming that accounting played a significant role in the economic growth and development that occurred during this period."

Some Nineteenth Century English Accountants' Contributions to Reporting for the Use of Long-Lived Assets (U. of Nebraska, 1970, 272 pp.; 31/8, p. 3710-A) by Kenneth O. Elvik. From his review of the "English journal literature" after 1880, Elvik states that "the conventional model of today, based on input prices, has a history of its own, and should not, as has been frequently suggested, be relegated to the role of a substitute for some ideal but impractical model." According to the author, "the inherited (ideal) model, according to the history of accounting, was one that emphasized an inventory of appraisal values on the balance sheet along with a corollary concept of income based on change in value of individual assets, including those acquired for use in the business." Further, this "model was abandoned in favor of (the conventional) one based on input prices" since difficulties arose "in arriving at valuations for specialized assets used by increasingly complex industries."

The English journal literature emphasized the balance sheet as opposed to the profit and loss account. Elvik suggests that this may have been due to "nineteenth century management secrecy (which) was far more strict than today with respect to operational details of revenue and expense." Thus, it appears that "the discussion about balance sheet valuations was an emphasis on data that management did not consider sufficiently important to suppress."

Also included in the dissertation are several chapters "devoted to the background which resulted in the creation of an accounting profession." This includes a "brief outline of the Companies Acts and some comments on other acts pertaining to certain regulated industries." Finally, "two chapters are devoted to observations in the late nineteenth century on accounting for goodwill and reactions of accountants to selected court decisions."

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