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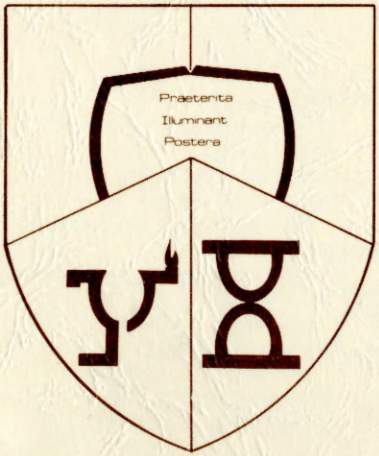

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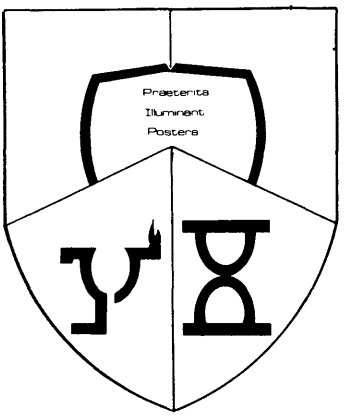

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CONTENTS

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CORPORATE ASSET REVALUATIONS: 1925-1934

Abstract: Early SEC filings for 110 corporations listed on the New York Stock Exchange are used to summarize the extent and accounting treatment of asset revaluations during the period 1925-1934. The findings, considered with a brief review of the relevant contemporary accounting literature, lead to the conclusion that the popular conception of extensive and misleading revaluations is generally unsupported. Significantly, *no* firm in the sample increased reported earnings during the period 1925-1929 as a result of asset revaluations.

Asset valuation procedures and their impact on reported earnings have long been major issues in the accounting literature and in accounting practice. Corporate asset revaluations during the period immediately preceding the Stock Market Crash of 1929 and the Great Depression of the 1930's have special importance, since a popular conception exists that these economic tragedies were in part the result of inadequate, misleading or even fraudulent accounting practices.[1]

This study, which is an extension of prior research done by Fabricant,[2] summarizes the asset revaluation practices of a sample of large corporations during the period 1925-1934, with special attention to the period 1925-1929. Although the popular conception of improper asset revaluation practices contributed to significant and far-reaching political responses in the Thirties and is still widely accepted today, the findings here are not consistent with that popular conception.

The first section of this paper briefly reviews the contemporary accounting literature to provide a perspective for evaluating the accounting practices of the late Twenties and early Thirties. The balance of the paper summarizes the actual asset revaluation practices of a sample of 110 large corporations, investigating the impact on both the balance sheet and the income statement.

The Accounting Literature

A large increase in the price level occurred during and immediately after World War I. Prices leveled out somewhat during the

twenties, but at about double the pre-war level. Many proponents of comprehensive asset revaluation argued that financial statements based solely on historical cost therefore did not represent economic reality. Outstanding accounting theorists such as Paton,[3] Hatfield[4] and Dickinson[5] advocated comprehensive asset revaluations.

A related argument, expressed by many, was that depreciation based on historical cost did not reflect the true cost of using the fixed assets and did not adequately provide for replacement when existing assets were retired. Sweeney[6] suggested this was the motive of most accountants who advocated asset revaluations.

These arguments in the literature apparently had some impact on accounting practitioners. Moss[7] and Bennett[8] indicated that asset revaluations were generally acceptable in practice. The editor of the *Journal of Accountancy*, A. P. Richardson,[9] advocated revaluations in an editorial. Several *Special Bulletins*[10] issued by the American Institute of Accountants' Library and Bureau of Information were written as though asset revaluations were readily accepted in practice. There were some opponents, such as Couchman,[11] but a large majority of the accounting literature supported asset revaluations.

While the concept of asset revaluation was acceptable, the techniques for implementation were less well-defined. Many advocated using independent professional appraisal firms and similar methods, independent of management determinations.[12] It has been charged, however, that some accountants were willing to accept and certify arbitrary and possibly misleading valuations established by boards of directors without independent assistance.[13]

Asset revaluations take on added significance if they have a direct impact on reported earnings. While most authors preferred recognizing revaluations, practically no one advocated reflecting such write-ups in the reported earnings. Most, like Hatfield[14] and Canning,[15] suggested that the appraisal increase be taken to an "appreciation surplus" account, which would appear as a separate account in the stockholders' equity section of the balance sheet. A *Special Bulletin*[16] also indicated that revaluations should not be taken into earnings.

Given the support for asset revaluations in the accounting literature, it is not surprising that they occurred. Of perhaps more importance is the extent and the accounting treatment of asset revaluations in the twenties and thirties.

SEC Form 10

The remainder of this paper summarizes actual asset revaluation practices. If this summary were constructed from the individual corporate annual reports or the financial reporting services of the twenties and thirties, questions could be raised as to the validity and the robustness of the data. Fortunately, a more reliable and complete source of data is available.

The Securities and Exchange Act of 1934 required all corporations whose securities were listed on any stock exchange to file an approved registration application with the Securities and Exchange Commission before July 1, 1935. Most firms filed using Form 10. This form could be prepared by the registrant, but it had to be certified by an independent accountant (usually a certified public accountant) before being filed with the Securities and Exchange Commission. The original Form 10's are stored in the archives of The Securities and Exchange Commission in Washington, D.C.*

Form 10 primarily required financial and other information for the two most recent fiscal years ending before July 1, 1935. It did, however, include one question, Question 34, about past asset revaluations. Specifically, each corporation was asked:

> If, since January 1, 1925, there have been any increases or decreases in investments, in property, plant and equipment, or in intangible assets, resulting from substantially revaluing such assets, state:
>
> (i) In what year or years such revaluations were made.
>
> (ii) The amounts of such write-ups or write-downs, and the accounts affected, including the contra entry or entries.
>
> (iii) If in connection with such revaluations any adjustments were made in related reserve accounts, state the accounts and amount, with explanations.[17]

Prior Research

Fabricant[18] in 1936 summarized the Form 10 responses of 208 large industrial firms (primarily mining and manufacturing firms) chosen randomly from those listed on the New York Stock Exchange. He found that 75 per cent reported write-ups or write-downs

*While gathering data from the SEC archives, I learned that many of the older documents filed there may be destroyed due to lack of storage space. This would be unfortunate, since these documents represent an excellent primary source for accounting and business historians.

during the period 1925-1934. He also reported aggregate write-ups and write-downs as a per cent of the 1934 aggregate book value of assets. Using his data, an average write-up of 5.7 per cent and an average write-down of 14.8 per cent of 1934 book values may be calculated for all firms which reported write-ups or write-downs. Fabricant also reported the number of revaluations in each year 1925-1934 and the dollar amount each year, although his data did not correct for double counting of firms which revalued two or more times. He finally discussed the likely motives of management in recording the revaluations.

Fabricant made a significant contribution to understanding the extent of asset revaluations, but his work has several limitations. Perhaps most important from the accountant's view is the failure to address the accounting treatment of the revaluations. That is, there is no discussion of the off-setting debit or credit entry when a revaluation was recorded. Also, Fabricant assessed the relative magnitude of write-ups and write-downs by comparing the revaluation amount to 1934 book values. "The dollar magnitude of write-downs as a percentage of net book value is therefore seriously overstated."[19] Write-up percentages may be overstated or understated, depending on whether there was a subsequent write-down.

Fabricant calculated a weighted average of write-ups and write-downs to 1934 net book value, taking the total amount of write-ups and write-downs for all firms and dividing by the total 1934 net book value of assets for all firms. This is consistent with his interest in macro-economic implications. However, to assess the importance of write-ups and write-downs for individual firms, it seems more relevant to calculate a simple average of each firm's per cent write-up or write-down. Finally, much of Fabricant's work is temporally aggregated. Since the period investigated breaks down into two rather distinct sub-periods (1925-1929 prior to the Stock Market Crash and 1930-1934 after the crash), it seems desirable to investigate the incidence and relative magnitude of write-ups and write-downs for each year and for each sub-period.

The Sample

A sample of 110 firms was randomly selected from the population of all firms listed on the New York Stock Exchange in October, 1929. Since the New York Stock Exchange accounted for over 60 per cent of all shares traded and well over two-thirds of the total stock market dollar volume in the United States during the late 1920's,[20] it seems

appropriate to select the sample from that population. The sample represents nearly 10 per cent of all firms listed then on the New York Stock Exchange. The Form 10 for each sample firm was reviewed to obtain information about its asset revaluations.

The Findings

The information gathered is summarized in Tables I-IV. Table I shows the total dollar amount of revaluations and the number of sample firms which revalued assets either upwards or downwards during the years 1925-1934 for each class of assets and for all assets identified on Form 10. It is interesting to note that upward revaluations of intangibles were quite uncommon in the period 1925-1934. The $8.75 million increase in 1927 and the $2.1 million increase in 1928 were revaluations by Standard Oil of New Jersey. Both were attributed to the increase in valuation of patents owned. Together, these increases represented less than one per cent of Standard Oil of New Jersey's total assets.

Upward revaluations of investments were also rather rare. Most of the dollar amount of revaluations of investments ($27.7 million in 1926 and $14.3 million in 1929, or 73 per cent of all upward revaluations of investments by sample firms) were by General Motors. The 1926 adjustment was to write up General Motors' investment in Fisher Body Corporation to the book value per Fisher Body's books, prior to consolidating Fisher Body Corporation. The 1929 write-up was to convert the investment in General Motors Acceptance Corporation (an unconsolidated subsidiary) from the cost to the equity basis.

During the late 1920's, total downward revaluations exceeded total upward revaluations. Only in the years 1926 and 1927 were there more upward than downward revaluations. In total dollar amount, almost one-half of all upward revaluations were attributable to the General Motors revaluations ($42 million or 20 per cent of the total) and to a 1927 revaluation by Pullman, Incorporated ($56.5 million or 27 per cent of the total). The Pullman revaluation was a recognition of increased market values at the time of a reorganization. Almost half the downward revaluations ($162 million or 49 per cent) were the result of write-downs in 1927, 1928, and 1929 by United States Steel. The General Motors write-ups aggregated about 4 per cent of General Motors' total assets; the Pullman write-ups were about 19 per cent of Pullman's total assets; and the U.S. Steel write-downs were about 7 per cent of U.S. Steel's total assets.

TABLE I
Asset Revaluations
($ Thousands)

	1925	1926	1927	1928	1929	1925-1929	1930-1934
PLANT ASSETS							
Amount of Increase	13,625	35,332	75,673	11,282	6,785	142,697	37,774
Number Firms-Increase	4	7	8	5	7	21	14
Amount of Decrease	(5,760)	(10,047)	(55,041)	(64,496)	(91,595)	(226,939)	(374,045)
Number Firms-Decrease	3	4	6	8	6	20	47
INVESTMENTS							
Amount of Increase	2,526	32,592	7,718	0	14,344	57,180	6,883
Number Firms-Increase	1	2	3	—	1	6	7
Amount of Decrease	(412)	(100)	(100)	(2,598)	(8,410)	(11,620)	(119,289)
Number Firms-Decrease	1	1	1	3	4	5	29
INTANGIBLES							
Amount of Increase	7	0	8,750	2,100	566	11,423	239
Number Firms-Increase	1	—	1	1	1	3	1
Amount of Decrease	(16,407)	(12,654)	(9,545)	(42,972)	(14,372)	(95,950)	(95,871)
Number Firms-Decrease	4	5	6	5	6	14	26
ALL REVALUATIONS							
Amount of Increase	16,158	67,924	92,141	13,382	21,695	211,300	44,896
Number Firms-Increase	6	9	11	6	9	29	20
Amount of Decrease	(22,579)	(22,801)	(64,686)	(110,066)	(114,377)	(334,509)	(589,205)
Number Firms-Decrease	7	9	10	14	12	30	66

In Table I the dollar amounts may be totaled horizontally or vertically as appropriate. However, since some firms revalued more than one type of asset in a given year it is not possible to total the number of firms across rows or down columns. Double counting is avoided by including a firm no more than once in any of the totals. In the case of a firm which revalued assets both upwards and downwards, the firm is included among the total for both types of revaluations. Eliminating this double counting, it was found that 46 firms (42 per cent of the sample) revalued assets upwards and/or downwards during the period 1925-1929 and 71 firms (65 per cent of the sample) revalued assets upwards and/or downwards during the period 1930-1934. During the entire period 1925-1934, 81 firms (74 per cent of the sample) reported revaluations. These latter findings are consistent with those of Fabricant, who reported that 75 per cent of the firms in his sample made an affirmative response to the asset revaluation question on Form 10.[21]

The dollar amounts are not as indicative of the magnitude of asset revaluations as are the ratios of revaluation amount to total assets of the firm immediately prior to the revaluation. Table II recasts the information contained in the "All Revaluations" section of Table I in terms of these percentages. In no year did more than 10 per cent of the firms in the sample revalue assets upwards, with about one quarter of the firms in the sample revaluing assets upwards at any time during the 1925-1929 period.

For each firm which reported any revaluation during the period 1925-1929, the book value of total assets before the revaluation was determined by adjusting amounts reported in the annual report for the year of the revaluation. If the annual report was unavailable, *Moody's Industrial Manual* was used. The percentage relationships between revaluation amounts and total firm assets before revaluation are reported in Table II. The simple average of these percentages and the median percentage for each year are reported.

The average percentage write-up is rather high for 1925 and 1926, primarily because of large write-ups by two firms in 1925 and by one firm in 1926. In 1925, Walworth Company revalued assets upwards by 25 percent and Oppenheim Collins by 24 per cent. Both revaluations were the results of appraisals at the time of reorganization. In 1926, Tennessee Corporation revalued its investments upwards by 28 per cent of total assets, to increase an unconsolidated subsidiary from a nominal $1.00 valuation to an amount equal to its book value. These were the only write-ups found which exceeded 20 per cent of total assets before revaluation.

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TABLE II
Relationship of Asset Revaluations
to Total Firm Assets
(1925-1929)

UPWARD REVALUATIONS:	1925	1926	1927	1928	1929	1925-1929
Mean Revaluation — as a Percentage of Total Assets	11.4%	8.9%	4.9%	3.6%	2.7%	6.1%
Median Revaluation — as a Percentage of Total Assets	4.3%	4.6%	2.1%	0.7%	1.2%	2.1%
Percentage of Firms in the Sample which Revalued in Year	5.5%	8.2%	10.0%	5.5%	8.2%	26.4%
DOWNWARD REVALUATIONS:						
Mean Revaluation — as a Percentage of Total Assets	10.5%	7.3%	3.6%	5.8%	4.8%	6.0%
Median Revaluation — as a Percentage of Total Assets	6.6%	1.8%	0.9%	4.6%	1.9%	3.9%
Percentage of Firms in the Sample which Revalued in Year	6.4%	8.2%	9.1%	12.7%	10.9%	27.3%

During the period 1925-1929, the write-ups which did occur averaged 6.1 per cent of total assets, and the average was that high because of a few relatively large write-ups. The median write-up was 2.1 per cent. Only 10 firms in the sample, less than 10 per cent of the total, revalued assets upwards by more than 5 per cent of the total assets. Five of those firms (American Brown Boveri, Oppenheim Collins, Pullman, U.S. Distributing, and Walworth) did so to reflect appraisals, three resulting from reorganization; two firms (Bethlehem Steel and Cerro de Pasco Copper) wrote-up assets to conform to valuations used by the Treasury Department for tax purposes; two (American Brake Shoe and Continental Can) revalued goodwill downward and revalued other assets upwards; and one (Tennessee Corporation) wrote-up investments to reflect the book value of an unconsolidated subsidiary. Except for American Brown Boveri, which revalued assets upwards by more than 5 per cent in two different years (15 per cent in 1926 and 14 per cent in 1928), no firm in the sample revalued assets upwards by so large a relative amount more than once.

The offsetting credits or debits which result from revaluing assets are an important part of the impact of revaluations. Tables III and IV, respectively, report the accounts credited when assets were revalued upwards and the accounts debited when assets were revalued downwards. The totals on Tables III and IV are the same as the "All Revaluations" section of Table I.

During the period 1925-1929 *no* firm in the sample increased income as a result of asset revaluations upwards. All revaluations upwards during the 1925-1929 period were confined to the balance sheet, with most of the credits being made to surplus. As seen on Table IV, a few downward revaluations reduced net income. The most significant was the $44.8 million write-down of plant assets in 1927 by U.S. Steel. No reason for this write-down was given in the Form 10, and it cannot be traced in U.S. Steel's annual reports.

Most of the offsetting debits and credits upon revaluation of assets, both in number of firms and amount of revaluation, were made to an unspecified surplus account. It was quite common in this period for a firm to show a single (unspecified) surplus account on its balance sheet in the stockholders' equity section. While the source of the surplus was not specified, direct debits or credits to that account for asset revaluations did not flow through the income statement.

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TABLE III
Offsetting Credit Accounts
for Asset Revaluations Upwards
($ Thousands)

Credit Entry to:	1925	1926	1927	1928	1929	1925-1929	1930-1934
Earned Surplus	0	574	12,336	4,634	2,323	19,867	25,036
(Number of Firms)	—	(1)	(3)	(2)	(2)	(5)	(3)
Capital Surplus	2,526	0	13,949	2,100	0	18,575	4,764
(Number of Firms)	(1)	—	(3)	(1)	—	(4)	(2)
Appreciation Surplus	0	4,500	0	0	0	4,500	0
(Number of Firms)	—	(1)	—	—	—	(1)	—
Unspecified Surplus	11,334	61,942	64,408	3,465	17,064	158,213	9,760
(Number of Firms)	(3)	(6)	(4)	(2)	(3)	(14)	(10)
Reserves	93	908	0	0	0	1,001	285
(Number of Firms)	(1)	(1)	—	—	—	(1)	(2)
Capital Stock	2,205	0	0	0	543	2,748	0
(Number of Firms)	(1)	—	—	—	(1)	(2)	—
Other Assets	0	0	1,448	3,183	1,765	6,396	4,230
(Number of Firms)	—	—	(1)	(1)	(3)	(5)	(3)
Income	0	0	0	0	0	0	821
(Number of Firms)	—	—	—	—	—	—	(2)
Totals	16,158	67,924	92,141	13,382	21,695	211,300	44,896
(Number of Firms)	(6)	(9)	(11)	(6)	(9)	(29)	(20)

TABLE IV
Offsetting Debit Accounts
for Asset Revaluations Downwards
($ Thousands)

Debit Entry to:	1925	1926	1927	1928	1929	1925-1929	1930-1934
Earned Surplus	6,095	12,000	7,658	6,379	8,451	40,583	101,119
(Number of Firms)	(2)	(4)	(4)	(3)	(2)	(6)	(18)
Capital Surplus	0	4,966	0	0	3,050	8,016	171,747
(Number of Firms)	—	(1)	—	—	(2)	(3)	(20)
Appreciation Surplus	0	0	0	17,458	0	17,458	2,338
(Number of Firms)	—	—	—	(1)	—	(1)	(1)
Unspecified Surplus	5,236	735	7,454	81,953	96,721	192,099	262,211
(Number of Firms)	(2)	(3)	(5)	(11)	(6)	(18)	(41)
Reserves	524	0	21	993	79	1,617	11,432
(Number of Firms)	(1)	—	(1)	(2)	(1)	(4)	(9)
Capital Stock	9,612	5,000	3,200	0	4,308	22,120	19,418
(Number of Firms)	(2)	(1)	(1)	—	(1)	(4)	(3)
Other Assets	0	0	1,448	3,183	1,765	6,396	4,230
(Number of Firms)	—	—	(1)	(1)	(3)	(5)	(2)
Income	1,112	100	44,905	100	3	46,220	16,710
(Number of Firms)	(2)	(1)	(2)	(1)	(1)	(3)	(10)
Totals	22,579	22,801	64,686	110,066	114,377	334,509	589,205
(Number of Firms)	(7)	(9)	(10)	(14)	(12)	(30)	(66)

Conclusions

Many present-day negative attitudes toward asset revaluation may be attributed in part to emotional and political responses during and after the Depression years to supposed asset revaluation abuses in the twenties and early thirties. Those abuses are a popular theme of advocates of historical.cost asset valuations. During the Depression years the popular press, segments of the financial press, and politicians expounding their political rhetoric argued that frequent asset revaluations, often intended to deceive, had taken place. It is impossible to determine the motivation of management in recording asset revaluation. However, the explanations recorded on the Form 10's seem reasonable and the information summarized here about the incidence, the relative magnitude, and the accounting treatment of revaluations does not reflect a pattern of extensive and deceptive revaluations.

Corporate asset revaluation practices in the period 1925-1934, which were generally consistent with the contemporary accounting literature, were not so common nor extensive as is generally believed. Of the 110 large corporations surveyed, about one-fourth revalued any assets upwards before the stock market crash. In fact, more firms revalued assets downwards during the period 1925-1929 than revalued assets upwards. (Extensive upwards revaluations might have occurred during the rapid inflation of 1914-1920, or any other time prior to 1925. Unfortunately that information was not collected by the SEC.)

The total dollar amount of downward revaluations was more than one and one-half times the total dollar amount of upward revaluations. Large revaluations, relative to total assets, were rare. Less than ten per cent of the firms in the sample revalued assets upwards by as much as five per cent of total assets prior to the revaluation. There may be some exceptions, but the evidence tends to refute any belief that upward revaluations were generally frequent and frivolous in the pre-Depression era.

Most significantly, not one firm in the sample increased earnings during the period 1925-1929 as a result of asset revaluations. During 1925-1929, over 95 per cent of the dollar amount of upward revaluations was credited to a balance sheet surplus account. During the same period a few downward revaluations reduced earnings, although three quarters of the downward revaluations were debited to a balance sheet surplus. Given the evidence, it seems that corporations were not using asset revaluations as a device for directly manipulating earnings in this period.

This study has not addressed several important issues. One is management's motivation for recording asset revaluations. Another is the future impact, through depreciation policies, of asset revaluations. If firms did not credit or debit earnings as a result of asset revaluations and then did recognize depreciation expense based on the revised asset value, the rather interesting result is that downward revaluations tended to increase a firm's earnings through time and upward revaluations tended to reduce earnings through time. Unfortunately, the depreciation policies of firms in the twenties and thirties are not easily determined.

Much remains to be discovered about the impact of asset valuation practices a half century ago. This study has hopefully provided some new evidence about just what those practices were.

FOOTNOTES

[1]The existence of a popular conception of extensive and misleading asset revaluations is reflected in the following passages:

> "Visions are called forth of the era between 1918 and 1934, when corporations frequently wrote up or wrote down the value of fixed assets by some arbitrary amount and altered depreciation changes accordingly. Often the revaluation made then seemed to have more to do with influencing the value of the company's securities on the stock exchange or with controlling dividend payments than with efforts to take account of changing prices in order to obtain a meaningful statement of profit."
>
> Edwards and Bell, *The Theory and Measurement of Business Income*, p. 185.
>
> "The belief that loose accounting practices had contributed to the 1929 market crash and the depression led to the first effective agitation for compulsory audit requirements."
>
> Chatfield, *A History of Accounting Thought*, p. 132.
>
> "These investors (in the 1920's) were unprotected from fraud or the consequences of their own ignorance. In particular, they could not rely on audited financial statements for their information."
>
> Most, *Accounting Theory*, p. 65.

[2]Fabricant, "Revaluation of Fixed Assets."
[3]Paton, *Accounting Theory*, p. 317.
[4]Hatfield, *Accounting: Its Principles and Problems*, p. 74.
[5]Dickinson, *Accounting Practice and Procedure*, p. 81.
[6]Sweeney, *Stabilized Accounting*, p. 46.
[7]Moss, "Treatment of Appreciation of Fixed Assets," p. 161.
[8]Bennett, "Treatment of Appreciation," p. 427.
[9]Richardson, "Editorial," *Journal of Accountancy*, p. 45.
[10]*Special Bulletins of The American Institute of Accountants*, September, 1921, and January, 1928.
[11]Couchman, "Limitations of the Present Balance Sheet," p. 268.
[12]Examples include:
Bennett, "Treatment of Appreciation," pp. 428-429.

Moss, "Treatment of Appreciation of Fixed Assets," p. 162.
Kohler and Morrison, *Principles of Accounting*, pp. 233-234.
[13]May, *Financial Accounting: A Distillation of Experience*, p. 93.
[14]Hatfield, *Accounting: Its Principles and Problems*, pp. 78-79.
[15]Canning, *The Economics of Accountancy*, p. 77.
[16]*Special Bulletin of the American Institute of Accountants*, January, 1928.
[17]Copied from original Form 10's on file at the Securities and Exchange Commission, Washington, D.C.
[18]Fabricant, "Revaluations of Fixed Assets."
[19]Zeff, *Asset Appreciation, Business Income and Price Level Accounting: 1918-1935*, p. 49.
[20]U.S., Congress, Senate, *Stock Exchange Practices*, pp. 8-9.
[21]Fabricant, "Revaluation of Fixed Assets," p. 2.

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NEW INSIGHTS FROM COST ACCOUNTING INTO BRITISH ENTREPRENEURIAL PERFORMANCE CIRCA 1914

Abstract: This article takes issue with economic historians who have tried to rehabilitate the reputation of the late Victorian and Edwardian entrepreneur. It argues that the revisionist attempt to ground their case on cost, profit, and productivity calculations flounders because of an insufficient analysis of the factors involved in arriving at cost, profit, and productivity. The economic historian, preoccupied with recent European economic development could, therefore, improve his analysis by incorporating the science of management accounting into his methodology. A companion piece to this article will be published in the fall issue of the journal.

Few if any problems in British economic history have drawn more attention than that of British economic performance during the late Victorian and Edwardian eras. Optimists have argued that the British economy functioned well, pessimists that it faltered badly, and the pessimists have usually had the upper hand in the debate. Recently a group of younger historians, led by Donald N. McCloskey, has decidedly challenged the pessimists' view. "There is . . .," McCloskey wrote, " little left of the dismal picture of British failure painted by historians. The alternative is a picture of an economy not stagnating but growing as rapidly as permitted by the growth of its resources and the effective exploitation of available technology."[1] Revisionists do not claim that the British economy expanded as rapidly as the American or the German; indeed some, unlike McCloskey, might even concede a relative economic stagnation. But they do not concede that the British entrepreneur can be faulted. Economic facts limited his parameter of action but within that parameter he performed well.

This article rejects the optimists' interpretation of British entrepreneurial performance. It is, however, less concerned with conclusions than with how conclusions have been reached, for much of the revisionism stems directly from the application of a "new" methodology, grounded in economic theory and quantification.[2] The contention is, therefore, that inadequacies in the optimists' conclu-

sions arise, to a considerable extent, from shortcomings in historical method. Ideas taken from cost accounting will be used in this two part essay to establish the validity of the contention.

The first part deals with epistemological problems raised by revisionist econometrics. Macroeconomics is the wellspring of the revisionism, but macroeconomics is not the only science that is concerned with economic activity. Carl Menger pointed this out in the 19th century when he described ". . . the separation of the sciences into historical and theoretical. History and the statistics of economy are historical sciences . . .; economics is a theoretical science." But he added that there is

> still a third [science], the nature of which is essentially different from that of the two previously named; we mean the so-called practical sciences or technologies. The sciences of this type do not make us aware of phenomena, either from the historical point of view or from the theoretical; they do not teach us what *is.* Their problem is rather to determine the basic principles by which, according to the diversity of conditions, efforts of a definite kind can be most suitably pursued. They teach us what the conditions *are supposed* to be for definite human aims to be achieved.[3]

The "third science" is important because it has developed over the past hundred years into business administration, a field in which the cost accounting technology that is now called management accounting finds its place. Cost accounting is an entrepreneurial technology par excellence. As a bookkeeping system which deals primarily with the accurate reporting of internal financial information, it is of interest not only to businessmen but to historians trying to evaluate entrepreneurial performance. Unfortunately, historians have not used the sciences of business administration in general and cost accounting in particular to facilitate their analysis of recent European economic development.[4] This is somewhat surprising considering the extent to which business schools have grown in American colleges and universities over the past eighty years. A significant methodological tool is at hand but because historians have ignored it even the new economic history has suffered scientifically, as this brief study of its use of data on costs, profits, and productivity will show.

The second part of the paper (to be published in the fall issue) will demonstrate how the development of cost accounting theory and practice can itself be considered an index of entrepreneurial

prowess in an economy. There is, of course, no necessary correlation between entrepreneurial excellence and a developed cost accounting technology. Sydney Pollard, in *The Genesis of Modern Management,* has stated, for example, that "[T]he practice of using accounts as direct aids to management was not one of the achievements of the British industrial revolution. . ."[5] Yet if throughout most of the 19th century profit margins were large enough, in Britain at least, for businessmen to be rather negligent about cost factors, with the keen industrial competition of the "great depression" (after 1873) cost consciousness heightened and cost accounting flourished.[6] First only prime costs, i.e., direct labor and raw materials costs drew the owners' and hence the bookkeepers' attention; but, as industry grew in organizational complexity and in plant sophistication and size, a third cost classification, burden (or overhead) occupied people's minds. Accounts for indirect labor costs (including the cost of management itself), for installation charges (lights, power, etc.), and for an ever more diversified inventory, which the new market economy required, were created. Capital equipment replacement, whose costs became progressively higher, had to be provided for in depreciation accounts that integrated depreciation allowances into the cost structure of manufactured products. After 1880, then, an elaborate manufacturing cost accounting system arose. After 1900 sales and distribution accounts were added in order to determine marketings' share of total product cost. And finally, after 1910, historical costs gave way to standard costing and budgeting as management strived to create accounting tools suitable for measuring costs, profits, and productivity in an increasingly complex industrial world. The institutionalization, during the Second Industrial Revolution, of entrepreneurial performance in the form of good accounting procedure became, therefore, in itself a factor in the creation of industrial efficiency. Indeed, a leading accounting historian, A. C. Littleton, has remarked, "It is not too much to say that the formulation of cost accounting procedures can be ranked as an achievement second only to the original development of bookkeeping according to double-entry principles. . ." in management technology.[7]

Although economic historians realized long ago that bookkeeping played an important role in modern European economic development, they have not, like some accounting historians, devoted much attention to cost accounting.[8] A survey of major periodicals shows, for example, that neither *The Journal of Economic History* nor *Explorations in Economic History* has ever published an article on

cost accounting; that *The Economic History Review,* aside from a recent article on "Josiah Wedgewood and Cost Accounting in the Industrial Revolution," only printed one other article on bookkeeping (not cost accounting); and that even the *Business History Review* has neglected the subject.[9] Only the article on the Dupont de Nemours Powder Co., 1903-1914, really deals with the contribution of a cost accounting system to a firm's success, and this firm, of course, was American.[10] Since cost accounting became a "necessary" technology in European as well as American industry after 1880, the second section of the paper will show how the institutionalization of this management technology did not speak well for British entrepreneurship.

First, however, a critique of revisionist quantitative work must be done. In "From Damnation to Redemption: Judgments on the late Victorian Entrepreneur," Donald N. McCloskey and Lars G. Sandberg state that they and others (including Roderick Floud, Charles Harley, Peter Lindert, and Keith Trace) have utilized a variety of analytical techniques to refute the hypothesis of British entrepreneurial failure.[11] Nonetheless, the authors continue

> this gives a misleading impression of heterogenity of purpose in the new work. The various measures used are essentially identical. Higher profits can be achieved if more output can be produced with the same input, that is, if productivity can be raised. The measuring rod for entrepreneurial failure, then, can be expressed indifferently as the money amount of profit foregone, as the proportion by which foreign exceeded British productivity, as the distance between foreign and British production functions, or as the difference in cost between foreign and British techniques. All of these give the same result and each can be translated exactly into any one of the other.[12]

Nothing about this statement would be methodologically foreign to a cost accountant. Although profits do depend on the market, undoubtedly they can be increased if "more output can be produced with the same input," e.g., if the prime costs (material and direct labor) and overhead costs can be reduced in the manufacture of a particular product the profits will be greater. Moreover the factors involved in the calculation of inputs and outputs employed in a productivity index are the same as those used in the calculation of production costs and profits. Still, the idea that a productivity figure, a profit statement, or a cost statistic can be used as a "measuring

rod" for entrepreneurial performance is not necessarily true. Productivity, cost, and profit are not factors in themselves but the result of economic activities that combine a multitude of factors. In some cases the factors which are involved in the calculation of cost, profit, or productivity reveal superior, in other cases poor, entrepreneurial performance even though the actual costs, profit, or productivity figures are the same. Entrepreneurial performance can be evaluated, as the science of cost accounting shows, only after the factors involved in the calculation of productivity, cost, or profit have been isolated and assessed.

Thus, since the revisionist historians work with productivity, cost, and profit figures, the validity of their statements about entrepreneurial performance depends on their analysis of the factors that go into the compilation of productivity, cost, or profit statistics. And in this respect their work is deficient. Three examples of insufficient factor analysis, picked at random from a collection of studies, will be used to substantiate this charge. The first is Donald N. McCloskey's study of productivity in the iron and steel industries of Britain and America before World War I.[13] The second is Charles Harley's analysis of the change from sail to steam power in the British merchant marine.[14] And the third is Roderick Floud's work on the machine tool firm Greenwood & Batley, 1856 to 1900.[15] The three studies are quite different in method and content but all suffer from inadequate factor presentation.

McCloskey, in his well-known quest to save the reputation of British entrepreneurs, claims that productivity in the British and the American steel industries was approximately the same before World War I (in fact Britain might have had a slight edge). This proves, he contends, that America had no technological advantage in this industry and, hence, that American entrepreneurial performance was not superior to British in this industry. Since pig iron was the most significant cost item in steel production he sought to prove his case by concentrating the analysis on comparative pig iron production.[16] McCloskey assumed that the marginal product of the pig iron used in the production of steel rails can be determined by dividing the price of pig iron by the price of steel rails. From this calculation he determined that the marginal product of pig iron used in British and American steel rails did not vary significantly and that the productivity levels (average market price of pig iron divided by average market price of steel rails) were comparable.[17] It is not McCloskey's productivity calculations but the technological conclusion he draws from them which is at stake here. These conclusions are question-

able because relative factor costs in pig iron production must be considered when relative technological performance is evaluated. Some of these factors could represent obsolescent, others progressive technology and the factor mix could be so different in the two countries that a technological gap could exist between their steel industries despite a temporary productivity parity.

Because McCloskey's article does not provide data for this factor analysis, Sydney Pollard's study of British shipyards in 1904 will be used to illustrate this contention.[18] Pollard observed that, since productivity per man in British shipyards was 12.5 tons as compared to 6.8 tons in the United States and 3.3 tons in Germany, Britain had an overwhelming productivity lead. He goes on to remark, however,

> There is little doubt that much of the equipment found in British yards was less advanced than that in America and Germany. British yards had their ancient steam engines to generate power, their lathes and plate-bending machines, but, as far as the installation of hydraulic, pneumatic, or electric power transmission was concerned, or the use of mechanical yard transport . . ., even electrical lights, most of them were years behind their chief foreign rivals, and visiting foreign experts could seldom conceal their astonishment at this backwardness.[19]

Obviously, in this industry, superior British productivity had nothing to do with technological advantages. Pollard's explanation: Britain's lead in fact is not technological. British shippers, who had long dominated world trade, ordered ships at such a rate that British shipbuilders, unlike their foreign competitors, could specialize in production, thereby enjoying economies of scale.[20] Because of the early start, moreover, British yards had been able to train an abundant supply of excellent artisans, boilermakers, shipwrights, and managers to build the ships. British shipyards acquired productivity advantages, then, because Britain's early commercial supremacy gave them a market and a trained labor force that their rivals did not have.

Pollard's article shows why good productivity should not automatically be equated with good technology. Better British productivity in 1904 probably resulted from the last positive effects of an old technology than from the first fruits of a new. As Pollard, referring to Britain's competitors, put it,

> In the absence of a pool of skilled labor, foreign shipbuilders were obliged to install expensive equipment much of

> which could not pay unless and until all processes had become much more mechanized and shipbuilding had become a true mass-production industry.[21]

Unless British entrepreneurs modernized their yards they would, when shipbuilding became a mass production industry in the 20th century, lose their productivity edge. Indeed the advantages of 1904 later would obstruct technological progress, for artisanal labor would fight to keep the old system rather than be replaced by the semiskilled machine operators typical of mass production industry. At the moment British shipbuilding held this productivity lead, then, the industry was already obsolescent.

The technological capabilities of the British, German, or American shipbuilding, iron and steel, or any other industry cannot be divined from productivity figures unless the factors which determined total costs have been scrutinized. Economic historians cannot assume that the cost factors were the same in two industries. It could have been, for example, that in one country industry had invested heavily in new plant and equipment while in another it had not. If that were the case then one overhead cost (depreciation) could be very high in one and very low in another industry. This could mean that the capitalists had kept prices low and profits high through shortsighted investment policy. Any intelligent cost accountant would know that these entrepreneurs were engaging in business folly, even though the stockholders might be taken in by the good dividends, and the economic historians by the low prices. Whether this happened in either the British or American pig iron industry is not known. McCloskey's view that productivity rates correlated with technological performance, therefore, could be right or it could be wrong. The fact that American iron and steel productivity subsequently outstrips British, as McCloskey himself acknowledges, suggests that he is wrong, for superior American technology, which accounts for this subsequent productivity gap, might have existed earlier. But, since no factor analysis was done, there is no way of knowing from the data presented in this essay whether its postulates are true.

The basic assumption in Harley's article is the following: as the steam engine became progressively more efficient coal consumption was reduced to a point where the cost of running steamships equalized and then fell below that of running sailing ships. He concluded, therefore, that a technological factor, engine efficiency, determined when a shipping line shifted from sail to steam. Harley did not prove his case directly by studying fuel consumption costs. Rather he found out which lines converted to steam on which voyages, and

when. His discovery that the time of conversion depended on the length of voyage (i.e., steam was first used on short hauls, then introduced on longer hauls) supported a technological explanation for the shift, i.e., storage space for the bulky engine fuel prohibited profitable longer voyages until more efficient engines reduced fuel consumption.

McCloskey and Sandberg claim that Harley ". . . reconstructed the production and cost functions for sailing and steamship, through which he was able to examine the speed with which entrepreneurs replaced one with the other as their relative profitability changed."[22] This is an extraordinary assertion. Cost accounting affirms that labor, material, and overhead are the principal cost divisions. To have done what McCloskey and Sandberg claim, Harley would have had to look at costs in all three categories for both sailing ships and steamships. He clearly did no such thing. He isolated one cost factor only, fuel, and assumed, since the time of conversion correlated with length of voyage, that engine efficiency determined the pace of change. But one major cost factor cannot be decisive unless it is considered with other major cost factors. It is possible, if improbable, either that sailing ship labor costs increased steadily and considerably, or that coal fuel costs fell drastically over a long period, thereby shifting the cost advantage away from sail to steam. The speculation is, moreover, potentially important. If rising labor costs on sailing ships were responsible for the conversion to steam, it could no longer be directly attributed to a technological factor. Harley's work is to be praised for its originality but it certainly falls short of the methodological thoroughness that has been claimed.

Roderick Floud used Greenwood & Batley's cost accounts to determine the firm's long-term productivity record (1856-1900). He concluded that ". . . Greenwood & Batley were achieving considerable increased productivity" during the period.[23] The question is whether Floud's productivity index is reliable. He preferred to use the capital invested in equipment manufacturing machine tools as one element in his index but was forced, because of the firm's poor bookkeeping, to abandon the idea. Instead he made the metal weight of the machines producing machine tools the input and the metal weight of the machine tools produced the output. If the amount of metal contained in the machine tools produced by a machine tool increased in relation to the weight of the producing machine, productivity improved. The index depends, therefore, on a very important assumption; namely, that the producing machine tool did not vary in weight during the period. If it did then the constant

with which he sought to measure productivity (increase of metal in machine produced in relation to the weight of producing machine) would become unstable and the productivity index would collapse. Floud realized the importance of his assumption.[24] But he did not give much evidence to prove that it was justified. He simply referred to some contemporary observations and moved on. Econometrics seeks to replace the subjectivity of argument-by-example from contemporary literary sources with the objective exactitude of statistical compilation. It seems inadequate, therefore, to produce a lot of statistical evidence to prove that one factor important to a calculation is true (i.e., that machine tools produced more weight in the machines manufactured) but none to show the validity of a second (that the weight of the producing machine tools remained unchanged).

Furthermore, the connection between entrepreneurial capacity and technological progress, which was Floud's ultimate concern, was examined inadequately. The period covered brought the transition from iron to steel construction; metal strengths greatly increased in relation to weights. It is hard to believe that this revolution in metallurgy did not affect the weight of producing machine tools but if it did not that fact must be explained. Floud hinted at the importance of the metallurgical question. He noted that, with the introduction of high speed steel, the machine tools had to be completely redesigned. But he added that these changes happened after 1900. This means, then, that Floud really studied this company during a period of technologically stagnation in the design and manufacture of machine tools. Greenwood and Batley cannot receive kudos for entrepreneurial prowess, despite a favorable productivity record, when world technology was dormant. A more useful question might be: how did Greenwood & Batley respond when the use of high-speed steels induced technological movement in machine tool design and manufacture? Floud does not answer this question. He stated only: "Such steels were introduced in the United States in the 1890s, but there was a delay in their introduction in Britain."[25]

One only has to read the minutes of the discussions which followed the papers printed in the volume from which these examples have been taken to realize the great extent to which the work suffers from methodological insufficiencies. Cost accounting theory emphasizes the complexity of profit, cost, and productivity determination, especially when such factors as depreciation and inflation have to be considered. Cost accounting practice shows the risky nature of generalizations about technological performance from productivity indices, particularly when the factor evidence is contradictory. Cost

accounting history reveals that uniform accounting practices were not followed before 1914, which raises doubts about the reliability of the statistics used in econometric studies. With such evidence no capable cost accountant could talk very confidently to his boss about a firm's comparative profit, cost, and productivity achievements. And economic historians, faced with conclusions about the good performance of British entrepreneurs, should be circumspect when these conclusions are based on incomplete data, collated some seventy years after events, which are subject to very different interpretations. At least the historians should be skeptical when these conclusions run counter to those of experienced contemporary management engineers and cost accountants who found British entrepreneurial and technological performance markedly deficient.

FOOTNOTES

[1]McCloskey, *Did*, p. 459.

[2]The strength of the optimists' case rests, by their own insistence, on the superiority of a methodology. McCloskey notes, for example, that "The route by which this and other conclusions . . . were reached is perhaps even more significant for British economic historiography in the long run than the conclusions themselves." McCloskey, *Essays*, p. 7. Indeed, for McCloskey the cliometric rescue of the British entrepreneur has become an indisputable historical truth. See, McCloskey, *The Achievements*, p. 23.

[3]Menger, p. 38.

[4]Although two influential business historians, N. S. B. Gras and Henrietta Larson, defined business history as "primarily the study of the administration of business units in the past" neither they nor the business history community used the analytical tools being developed in schools of business administration. Certainly they have ignored cost accounting.

[5]Pollard, *Genesis*, p. 288.

[6]An editorial on "Practical Prime Costs" in *Engineering* (1891) said that up to twenty years before "selling prices could generally be fixed at figures leaving good margins, and a 'rough and ready' cost of a certain article or piece work, upon which generally could be fixed a fancy profit, with a liberal contingency allowance, was as a rule found all that was required. . . . It is during the past 15 or 20 years that prime costing has been developed to the elaborate systems in operation in many of our large and well-managed firms." Solomons, p. 19.

[7]Littleton, p. 359.

[8]This point has also been made by H. Thomas Johnson in *The Role*, p. 444.

[9]McKendrick, pp. 45-67.

[10]Johnson, *Management*, pp. 184-204.

[11]McCloskey and Sandberg, p. 103.

[12]McCloskey and Sandberg, p. 103.

[13]McCloskey, *International*, pp. 285-309.

[14]Harley, pp. 215-37.

[15]Floud, pp. 313-44.

[16]See also McCloskey, *Productivity Change*, pp. 281-96. Although, in this work, McCloskey establishes a productivity index on the basis of relative factor mix in

British pig iron production he does not do the same for the American industry. Thus there is no basis for comparing the relative factor mix in both countries. He states that the mix between coke, iron ore, labor, and capital, remained constant in the British industry throughout the period. He also says that British productivity did not grow during the period. What was the factor mix in America? Did it also remain constant? The questions are important because America did achieve productivity gains between 1885 and 1913.

[17]Calculations are given in McCloskey, *International*, pp. 297-98.

[18]Pollard, *British*, pp. 426-44.

[19]Pollard, *British*, p. 437.

[20]Pollard writes, "Of the superiority in skill, labour and management at that time, based on tradition and on an efficient system of apprenticeship, contemporaries had little doubt. American wages were higher than British by a third at least, a difference that more than outweighed any possible higher productivity gained by mechanical equipment (while overheads were, of course, much higher)." Pollard, *British*, p. 437.

[21]Pollard, *British*, p. 437.

[22]McCloskey and Sandberg, p. 103.

[23]Floud, p. 336.

[24]Floud, p. 322.

[25]Floud, p. 343.

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EARLY ENCOUNTERS BETWEEN CPAs AND THE SEC*

Abstract: The recollections of John L. Carey about the policies and politics in professional circles during the very important period when the Securities Exchange Commission first came into being. Mr. Carey served the American Institute of Certified Public Accountants in various capacities from 1925 to 1969, including editor of *The Journal of Accountancy* and Administrative Vice-president, and received the Institute's gold medal for distinguished service to the profession.

The stock market crash of 1929 ruined many investors, large and small. Thousands of people who had bought stocks on margin during the "New Era" boom of the late 1920's were completely wiped out. Some men who had thought they were wealthy jumped out of windows.

An angry public turned its wrath on the stock exchanges, the investment bankers, the corporations whose stocks had lost much of their value, and to some extent the accountants who had audited the financial statements of those corporations. However, the accounting profession had a lower profile then than now. Only the more knowledgeable observers were aware of the auditors' role, so they were not as visible a target as others. This dubious advantage was not to last long.

The Senate Committee on Banking and Currency launched an investigation of the securities markets, with Ferdinand Pecora, a tough lawyer, as committee counsel. The findings were to result in the Securities Acts of 1933 and 1934.

In 1932 two events fanned the flames. The international empire of Kreuger and Toll collapsed when its head, Ivar Kreuger, known as the "Swedish match king", committed suicide. It was found that he had falsified accounts, forged documents, and concealed misappropriation of funds on a massive scale. American investors in his companies lost heavily, and questions were raised about audits of the financial statements. American accountants who had any connec-

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tion with Kreuger and Toll subsidiaries were called upon to testify, but since the frauds had occurred in Sweden, where no American accountants had access to the records, they were not held responsible. However, doubts had been raised about the effectiveness of financial reporting and independent audits in general.

Also in 1932, a book was published which had great impact in sophisticated circles, and further encouraged demand for legislation regulating the issuance of securities and financial reporting of the issuers. This book was *The Modern Corporation and Private Property*, by Adolf A. Berle, Jr. and Gardiner C. Means, published under the auspices of the Columbia University Council for Research in the Social Sciences, acting on behalf of the Social Science Research Council of America. So far as I know this was the first scholarly and authoritative analysis of the modern corporation in America and its relation to stockholders and investors. Its main thrust seems hardly novel today, but it was news to many people then: that ownership and management were almost completely separated; that management almost completely controlled the corporation's affairs; that stockholders as a whole had little voice; and that the information available to stockholders was often inadequate to permit sound judgment of the risks they were assuming.

This naturally led the authors to discussion of corporate financial reports and independent audits. In the preface credit was given to Professor William Z. Ripley, "who must be recognized as having pioneered this area". Professor Ripley's criticisms of the accounting profession in the mid-1920's had been responded to by George O. May at the American Institute's 1926 annual meeting.

In 1932 George O. May had enjoyed some five years of freedom from administrative responsibilities as senior partner of Price Waterhouse & Co. He was consultant to the Committee on Stock List of the New York Stock Exchange, and chairman of the American Institute of Accountants' Committee on Cooperation With Stock Exchanges, which was working with the Exchange on the development of new standards of financial reporting.

Among Mr. May's acquaintances was the brilliant young Columbia University law professor, A. A. Berle, co-author of *The Modern Corporation and Private Property*. Somehow Mr. May must have learned that the book was being written, and found opportunity to talk with Berle before it was published. While Berle was highly critical of current accounting practices, the criticism was somewhat tempered by such interpolations as: "Accountants of the highest grade decline to certify to such statements . . ." and "Capable accountants of a

high degree of integrity will catch these situations as they arise . . ." To me these modifications of an otherwise devastating indictment were clear evidence of George O. May's diplomatic influence.

Although Professor Berle seemed to be a somewhat opinionated, arrogant young man, his brilliance could not be questioned. A member of President Franklin D. Roosevelt's "brains trust", Berle was the principal author of *The Modern Corporation*, which later events suggested was almost a blueprint for the Securities Acts. So it was not of trifling importance to have him say in the book, "the integrity of the accountant and the soundness of his method are the greatest single safeguard to the public investor", even though the compliment was diluted by the comment, ". . . The failure of the law to recognize accounting standards is probably due to the lack of agreement among accountants. . . ."

My own acquaintance with Berle came about in this way. In the spring of 1933 the "Truth in Securities Act" became law. Berle's book, it could be assumed, had had some influence on the content of that law. Berle himself was an advisor to the President. It seemed to me that it would be a brilliant stroke of public relations to persuade him to speak at the annual meeting of the Institute to be held at New Orleans in the fall. I cannot recall clearly whether the idea originated with me or not, but I think it did. However, Mr. May could have suggested it, and in any event he must have approved it, and probably made the first approach to Mr. Berle.

As secretary of the Institute it fell to me to call on Professor Berle and present the formal invitation. He was thin, sharp-featured, unsmiling and unbending. However, after I made my little speech, alluding to the interest in accounting manifested in his book, he accepted the invitation to address the Institute's annual meeting. I remember expressing the hope that he could take some time off, away from all the pressures on him, and enjoy a few days' relaxation in the attractive city of New Orleans after the meeting. He put me in my place by saying rather frostily that if he had time for a vacation he would take his family to some quiet spot without being involved in a convention.

Anyway, I was jubilant at the prospect of having so influential a personality address our meeting. His acceptance was highlighted in the announcements, and doubtless influenced many members to attend. But I was to experience the first of many disappointments of this kind — shortly before the meeting Professor Berle telephoned to say that he could not attend in person but would send his paper.

I pleaded with him not to disappoint the hundreds of accountants who expected to hear him, but he was adamant, and that was that.

His paper, "Public Interest in Accounting," was read at the meeting by Walter A. Staub of New York. The paper did not evoke much applause. It stated that accounting was ceasing to be in any sense a private matter; it questioned a number of specific accounting practices; and it called for the consistent development of accounting principles subject to the test of public interest. Then in the paper Professor Berle questioned whether such principles could be developed by accountants alone — whether individual accountants could maintain completely impartial minds when under the "instructions" of a client. He predicted that a government bureau would be set up to standardize accounting practices in various industries.

At the meeting Walter Staub was asked to read Berle's paper. Having dutifully done so, Mr. Staub opened the discussion by strongly challenging the author's assumptions and conclusion. Staub, a key partner of Lybrand, Ross Bros. & Montgomery was an extremely competent and influential man. He was an assiduous student of accounting and all that pertained to it. In his remarks, he pointed out the failure of government control of the accounting of railroads, utilities and banks. He cited the progress the profession had already made, and was making, in cooperation with the New York Stock Exchange and bankers, toward elimination of accounting practices which Berle had criticized. Then Staub almost angrily rejected Berle's patronizing doubts about the independence and impartiality of public accountants.

Mr. Staub's remarks were warmly applauded, and were followed by discussion from the floor. The audience sensed that control of accounting by government was nearer than ever before. The Securities Act had become law only a few months earlier. It gave a government agency power to prescribe the form and content of financial statements, and the methods to be followed in the preparation of accounts. Among those at the New Orleans meeting anxiety was mingled with resentment at Berle's too facile criticisms, and Staub's strong defense of the profession was a welcome rallying cry.

Unfortunately, as I thought then and still do, this exchange of views had little or no public exposure. So far as I remember, the press was either unaware of the incident or paid it little attention. Reporters were not in the habit of covering accountants' meetings, and the general public showed no interest in accounting at all. It was customary to publish in *The Journal of Accountancy* the papers

presented at annual meetings, but in this case the powers that be decided not to give Berle's views that much circulation. I ventured to suggest that both his paper and Staub's rebuttal be published, but to no avail. I was not the editor of *The Journal*, I had been secretary of the Institute for only two or three years, and I had not reached my thirtieth birthday, so my judgment on matters of high policy did not weigh heavily! What I had dreamed of as a major public-relations coup turned out, to mix a metaphor, as a lead balloon.

In January, 1934, only a few months after the meeting at New Orleans, the Institute published "Audits of Corporate Accounts," a pamphlet containing the historic correspondence between the Institute committee headed by George O. May and the Committee on Stock List of the New York Exchange, staffed by J. M. B. Hoxsey. The negotiations leading to this publication had begun in 1930, as recounted in the second paper of this series.

"Audits of Corporate Accounts" clarified the responsibilities of independent auditors: established the concepts of generally accepted accounting principles and consistency in their application from year to year; and proposed the first standard form of auditor's report, which was immediately adopted and has survived with some changes to the present day.

The Securities Acts of 1933 and 1934

The events just described coincided roughly with the enactment of the Securities Act of 1933, the Securities Exchange Act of 1934, and the creation of the Securities and Exchange Commission to administer them both.

The 1933 Act was one of the first major reforms of the "New Deal" launched by Franklin D. Roosevelt, who had been inaugurated as President only a few months before this law took effect. The findings of the so-called Pecora investigation provided background information for the legislative draftsmen.

While the bills were pending before Congressional committee the Institute made some recommendations informally "through various channels . . . to persons influential in the administration and in Congress." But the only certified public accountant to speak on the proposed legislation was Arthur H. Carter, then president of the New York State Society of Certified Public Accountants. He appeared before the Senate Committee on Banking and Currency to advocate inclusion in the new law of a requirement that the accounts of registered corporations be audited by independent accountants.

The fact that he took this step without consultation with the Institute pointed up some of the flaws in the profession's organizaional structure, and in personal relations among some of its prominent members. There were two national organizations — the Institute and the American Society of Certified Public Accountants, of about equal size. Almost as large as each of them was the oldest state society, the New York State Society, most of whose members belonged to neither national group. Partly because of this, and partly because of its position astride the nation's financial center, this state society considered itself independently competent to deal with national legislation affecting the profession, as well as local affairs.

Colonel Arthur H. Carter, then president of the New York State Society, encouraged this attitude, partly, perhaps, because he had not been made to feel an intimate member of the Institute's inner circle. Colonel Carter was a relatively recent arrival among the heads of the large accounting firms. He was a West Point graduate, formerly a regular army officer, and author of a book on artillery tactics which had attracted favorable attention in military circles. He married the daughter of Elijah Watt Sells, one of the two founders of Haskins & Sells. In 1919, after World War I, Colonel Carter joined that firm and passed the CPA examination. In 1930 he became managing partner of Haskins & Sells.

He was a handsome man, of military bearing, with a flashing smile and attractive personality. However, the habit of command apparently kept some colleagues at a distance. John Forbes, who had been partner in charge of all Haskins & Sells west coast practice, told me that Colonel Carter was a brilliant man, but just didn't understand the partnership relation. Mr. Forbes resigned from Haskins & Sells, and then in 1932 became president of the Institute. This may not have enhanced the Colonel's affection for the organization.

Then again, there was some feeling of rivalry between the large firms of purely American origin — Haskins & Sells and Lybrand, Ross Bros. & Montgomery — and those of British origin, many of whose partners in America had come from England and Scotland — Price Waterhouse & Co., Peat, Marwick, Mitchell & Co., and Barrow, Wade, Guthrie & Co., for example. Since George May of Price Waterhouse was highly influential in the Institute, Colonel Carter may have been moved to demonstrate via his office in the New York State Society that native American accountants were capable of providing leadership.

In any case, he testified before the Senate Committee. It was not a kindly audience. The questions and comments revealed an aston-

ishing ignorance on the part of some senators regarding the nature of independent audits. One senator seemed to suspect that the witness was seeking additional employment for certified accountants. Questions ranged from how much audits would cost, to why corporation controllers needed to have their work reviewed, to why the government should not perform the audits if they were necessary. One senator asked bluntly, "Who audits you?" Colonel Carter's inspired reply, "Our conscience," has been quoted more than once.

In any event the Securities Act of 1933, as enacted, gave the administrative agency authority to require independent audits.

The first reaction was appointment of an Institute committee on cooperation with the SEC. This committee, accompanied by the Institute's secretary (me), promptly waited upon Joseph P. Kennedy, the Commission's first chairman. Mr. Kennedy was cordial enough. He welcomed the offer of cooperation in developing regulations essential to administration of the accounting and auditing provisions of the new securities laws. However, he didn't stay on the job very long. He was appointed Ambassador to Great Britain, and was succeeded by James M. Landis, who, if memory serves me right, was a former dean of Harvard Law School, briefly a member of the Federal Trade Commission (which first administered the 1933 Act), and then a member of the SEC.

Another member of the new SEC was George C. Matthews, who, as I recall, had been a member of either the Wisconsin Public Utility Commission or the Tax Commission. He knew more about accounting, albeit from a specialized, regulatory point of view, than most of his colleagues. He was also a reasonable, moderate man, who was willing to listen.

However, Mr. Landis was not so easy to deal with. Cordial and conciliatory at first, he became increasingly critical of the accounting profession. He was a thin, tense, somewhat impatient man, almost humorless, and clearly feeling the pressure of his new responsibilities.

The Institute Committee on Cooperation With the SEC worked very hard. There were many meetings in Washington with staff and members of the Commission, most of which I attended. Much of the discussion of technical matters was over my head, but it was clear that the Institute representatives had a big job of education to do. Most of the commissioners and top staff were lawyers or economists, with less than a perfect understanding of accounting and auditing. In developing policies and regulations covering these areas some SEC officials were tempted to write a rule book establishing uniform

accounting for corporations subject to their jurisdiction. The Institute committee kept pointing out the hazards of such an approach.

The publication in 1934 of "Audits of Corporate Accounts" strengthened our committee's contention that the profession could do the job of developing accepted accounting principles.

The commission had soon realized that it needed a full-time senior staff assistant who was a qualified professional accountant. By a stroke of good fortune Carman G. Blough was appointed to the newly created post of Chief Accountant of the SEC. He had served in the new Commission as security analyst and as assistant director of the registration division. He was a CPA of two states, a former member of the Wisconsin State Board of Accountancy, a former accounting professor and head of the accounting department at the University of North Dakota, member of the Wisconsin Tax Commission, and secretary of the Wisconsin State Board of Public Affairs. Blough was not only a competent accountant but was temperamentally ideally qualified for the new job. The ablest practitioners who dealt with the Commission soon came to respect and like him. Perhaps more importantly, the commissioners themselves soon came to rely on him heavily for decisions on accounting and auditing matters.

The critical importance of having such a man in the powerful office of Chief Accountant of the SEC was soon to be demonstrated.

Chairman Landis, who always seemed to be harassed, his patience strained, could blow hot and cold. In January, 1935, speaking before the New York State Society, he praised the CPA organizations for their help and cooperation and invited their criticism and questions — "We need you as you need us." In October, 1935, speaking before the American Management Association, he referred to the accountants in a way that suggested they were helpful collaborators. But in December, 1936, in a speech to the Investment Bankers Associations, he delivered this wintry blast:

> The impact of almost daily tilts with accountants, some of them called leaders in their professions, often leaves little doubt that their loyalties to management are stronger than their sense of responsibility to the investor. . . .The choice here of more or less regulation is an open one for the profession. It is a 'Hobson's choice' for government.

This threat, without prior warning, was a shock. The chairman of the Institute Committee on Cooperation With SEC telephoned Mr. Landis to express concern. Mr. Landis, tired perhaps, was not belligerent. He indicated a desire to be helpful, and suggested con-

sultation with the Commission's chief accountant. The result was an arrangement whereby Carman Blough could consult the Institute committee on questions involved in disagreements between the commission's staff and accounting firms who had signed financial statements filed with the SEC.

This blossomed into almost continuous consultation, including frank informal discussions, between Carman and Institute representatives as well as individual partners of accounting firms. This give and take focused on specific cases involving problems of corporate financial reporting. Gradually a pragmatic, evolutionary approach to development of accounting principles was developing.

As the Commission's confidence in Carman's competence and judgment increased his recommendations became more and more influential. The SEC dropped the idea of issuing a rule book, for the time being at least, and offered the profession the opportunity to take the lead in improving the situation, while reserving the SEC's right to exercise its authority whenever it seemed desirable to do so.

Meanwhile, the profession had made some tentative steps toward establishing formal, authoritative guidelines governing corporate financial reporting, and the effort was soon to be beefed up substantially. But that is a subject for another paper.

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1794 MIDDLETOWN, DELAWARE – FROM ACCOUNTING RECORDS*

Abstract: The economic life, customs and importance of 1794 Middletown, Delaware are interpreted from the accounting ledgers of a general store and a blacksmith shop.

A customers ledger covering the period 1794 to 1801 presents a picture of economic life at the turn of the century in an eastern U.S. village. The ledger, now in the possession of Mr. H. F. Green, proprietor of St. Augustine's Oldest Store Museum, was found by his mother 75 years ago in Smyrna, Delaware. The first two-thirds of this ledger contains the customers' accounts of 1794 to 1796 for a general store operated by Reynolds and Clark, Merchants. The last third contains the 1799 to 1801 accounts of John Reynolds and Company, a blacksmith shop. John Reynolds, Esq. was an enterprising man; he was an attorney, a partner in the general store, owner of a blacksmith shop, operated a charcoal kiln and was an early banker for many of the local citizens. The ledger contains no direct information locating the two enterprises but Reynolds was on the tax list of Appoquinimink Hundred (township) which included Middletown. This and transaction references such as "to cash per Middletown day book" place the store in Middletown, Delaware. The location of the blacksmith shop could not be determined but probably was in a nearby but different village from the store because only 19 of the 95 customers of the blacksmith shop were among the 125 customers of the store.

Middletown, Delaware

Middletown is located 22 miles south of Wilmington and approximately 50 miles from Philadelphia. (Fig.1) By 1799 a stage coach line, carrying the mail, made daily runs from Dover through Middletown and Wilmington to Philadelphia.[1] The first U.S. census (1781)

*Based on a paper given at the Southeastern AAA meetings at the University of Tennessee, April 30, 1977.

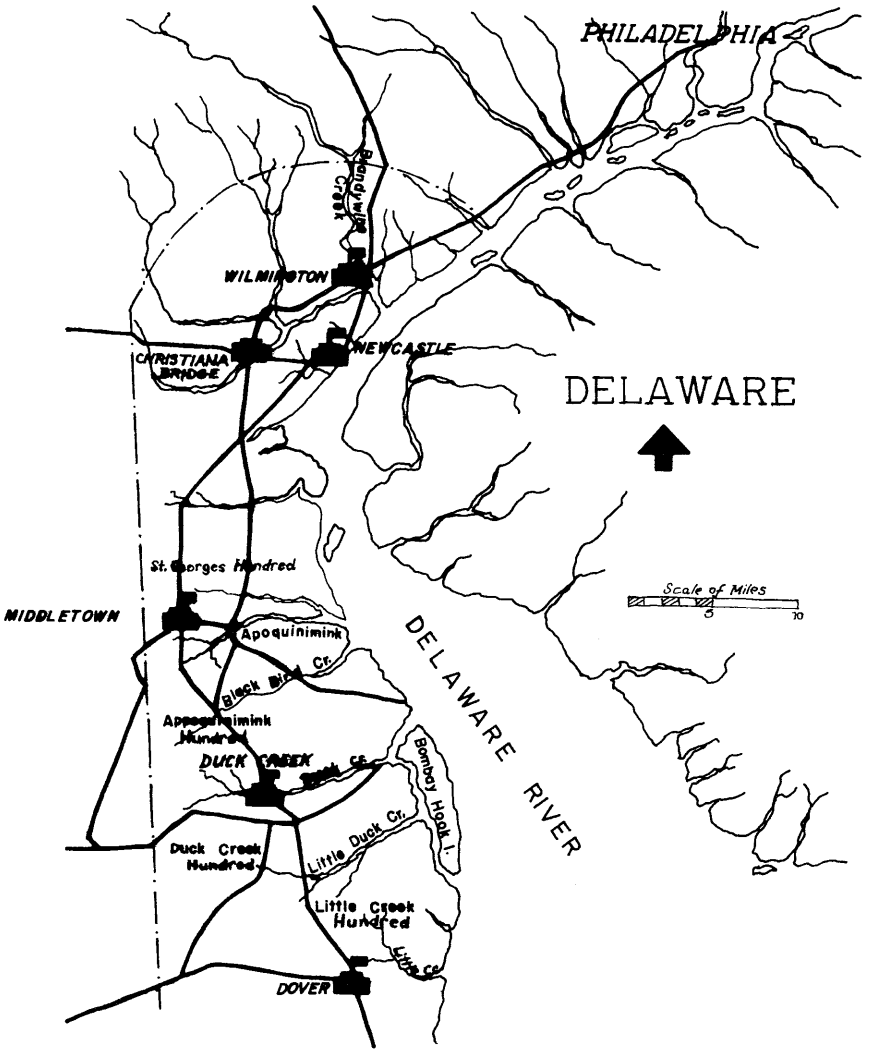
PHILADELPHIA
Brandywine Creek
WILMINGTON
CHRISTIANA BRIDGE
NEWCASTLE
DELAWARE
St. Georges Hundred
MIDDLETOWN
Apoquinimink
Black Bird Cr.
Apoquinimink Hundred
DUCK CREEK
Duck Creek Hundred
Little Duck Cr.
Bombay Hook I.
Little Creek Hundred
DOVER
DELAWARE RIVER
Scale of Miles
0
10

Fig. 1

gives only the population of New Castle County but the second U.S. census (1801) indicates the Appoquinimink Hundred had a population of 4,245. Between the first and second census, New Castle County had a population increase of 30% so the 4,245 figure must be reduced for this increase and because the Appoquinimink Hundred was a larger area than Middletown alone. If we estimate the population at 3,000 in 1794, Middletown was still an important village, for in 1781 the entire population of Delaware was 59,094.

The importance of 1794 Middletown in the colonial history of Delaware is borne out by the prominance of five store customers. Richard Bassett, Esq. of Bohemia Manor was a landowner, lawyer, militia officer, U.S. Senator (1789-1793), Delaware Chief Justice (1796-1799) and Governor (1799-1801).[2] Another customer, Dr. Joshua Clayton, was the last president of Delaware (1789-1799).[3] His son Dr. James Clayton was surgeon in the U.S. Service.[4] Levi Hollingsworth operated a line of "stage boats" between Philadelphia and Christiana and was part owner of wharves on Christiana Creek at "Christiana Bridge."[5] Joseph Rothwell was the owner of Rothwell's Wharves on Ducks Creek.[6]

Barter transactions in the ledger and other ledger references disclose that Reynolds and Clark's customers included: 3 attorneys, 4 doctors, a minister, 5 millers, 1 tailor, 2 shoemakers, a store owner, a sawmill operator, a blacksmith, a tanner, a weaver, a barrell maker, and a hatter. Other customers acted as brokers of wheat, corn, tobacco, and cloth. Middletown was a town heavily involved in the commercial activity of the late 18th century colonial period.

Commodities and Prices

The price structure of a period can best be related to an appropriate standard by examining the wage levels of that period. Commodities and services were priced in English currency in the ledger. These have been converted at the exchange rate of 7s6d per $1, the consistent practice of the storekeeper when $10 and $20 bank notes were received. Steven Bonckell, a customer was charged $15 for one year's services of Jim (the storekeeper's son or slave?). Colling (chopping) a cord of wood brought $.40 and a man, wagon and team of horses cost $2.22 per day. The store clerk received $22.67 for a year's clerking. Harrison, the tailor received $1.80 for making a new coat. Dr. John Clayton received $16.87 for one year's medical care of Alexander Clark's family. The annual rent of the store building occupied by Reynolds and Clark was $13.33 and Dr.

Clayton rented a farm to owner-partner, Alexander Clark for $66.67 per year.

Commodity prices and the nature of commodities in everyday use offer a glimpse into the life style of the common man. Stable prices prevailed over the two year period for there were few commodity price differences that could not be explained by differences in the quality of the goods. A complete list of products sold by the general store are included in Appendix A. The commodities purchased at the general store are for the most part, quite familiar to us today. Those handed by the blacksmith are, of course, those of an earlier technology and quite unfamiliar to todays city dwellers. Most prices appear to be quite in line with the wage level of the time. Coffee and tea were luxury items and their prices ($.25 and $2.22 per pound respectively) reflected the high transportation costs of the period.

Items of particular interest to the men of colonial Middletown were:

Cards, per pack	$ .50	Saddle	$7.00 to $11.33
Buggy whip	3.00	Snuff box	.09
Gun flints, each	.02	Steel trap	.62
Musket	5.00	Tobacco, per lb.	.20

The people of Middletown appear to have been kept in good spirits for there was a steady demand for brandy at $1.20 per gallon, rum at $1.27 per gallon and whiskey at $1.10 per gallon. There was a lesser call for port wine at $.22 per pint and the aristocrat of drinks, gin (probably imported from England), at from $1.00 to $1.20 per quart.

Colonial Financial Institutions

Charges to customers in English currency indicated that the people were accustomed to commodity and service prices being stated in pound sterling. Cash payments, however, were very infrequently in even pounds or shillings, indicating that few English coins were in circulation. Small payments were in fractional amounts which would point to the general use of Spanish, Portuguese and other foreign coins. A surprising number of payments in U.S. $10 and $20 bills indicate wide-spread use of U.S. bank notes. These notes may have been those of the Bank of North America founded in Philadelphia in 1783 or of the Bank of the United States chartered in Philadelphia in 1791.

Barter was still an accepted practice and customers settled their accounts with labor services and commodities such as wheat, corn, herring, hides, muskrat skins and scrap iron. Bookkeeping barter by transfer of credit and credit guarantee was much more prevalent, however. Three attorneys and a wealthy layman used the general stores as a means of granting credit to others in the period 1794 to 1795 as follows:

Richard Bassett, Esq.	£ 318 to 19 people
John Carnan	£ 270 to 24 people
Edward Oldham, Esq.	£ 63 to 13 people
John Reynolds, Esq.	£ 148 to 13 people

These four men made loans in the form of store credit to 69 people for over £2,100 in a period of slightly more than one year.

John Carnan was a broker for wheat and the store was a collection agent for him. This was the manner in which some of those who used his credit made repayment to him. Others who acted as bankers were repaid by services or commodities. The account of Edward Oldham, Esq. was given credit for hides turned over to the storekeeper by one of his credit debtors. Wheat collected by John Carnan and corn gathered by Joseph Israel were sold in Philadelphia and payments of fairly large sums (in one case, £415) were periodically made there by those gentlemen to Reynolds and Clark's grocery suppliers, Joseph North and Haskens. These payments completed the bookkeeping barter cycle[7] from the general store; granting credit to customers, charging the brokers' accounts, accumulating corn and wheat from these customers and giving credit to the brokers and finally receiving settlements in the form of credit transfers from the brokers to pay merchandise bills in Philadelphia.

Colonial Language and Spelling

Colonial spelling made use of double letters to a greater extent even than our curious retention of this vestigial practice. Hatts, bonnetts, powder and shott, and chamber potts are good examples. They also made quite logical substitutions (phonetically speaking) in the words syth, neadles, shoss (shoes), steal (steel), fryan pan, oyl cloth, misrat, sidder, buttins, molasis, and nutmig.

The language, particularly in the blacksmith's records, made use of many terms that are unfamiliar to us. *The Oxford English Dictionary,* Green[8] and Tull[9] clarified some of the strange words and phrases but others remain a mystery. To "lay an axe" was "to weld

a new piece of steel in the body of the old axe that had been worn out." Jethro Tull made clear the meaning of "repairs to land side on shear" when he described a plow as having a *land side* and a *furrow side.* Another type of repair made to a plow had a beautiful sound, "laying shear on wing and bar."

Shoeing a horse was "to shewing grey mare, 1 s., 10 d." or "to platting your horse, 3 s., 9 d."[10] A single new shoe cost 25¢ and a remove[11] (resetting old shoes?) was 14¢. "Frosting" a horse was a strange term until it was found that the blacksmith also sold frost nails. The Oxford Dictionary explained that frost nails were special nails placed in horses' hooves to prevent slipping on icy roads. "Sharpening mill pick" was sharpening a tool used to cut channels in millstones. Other terms such as "ironing well bucket" were self explanatory but the meaning of "upsetting two grubbing hoes" remains unclear. Frequent charges were made to the blacksmith's customers for clouts (patchplates of iron) and for a clevis which was a cuff at the end of the plogh-beam to which the single-tree was fastened. Frequently sold items in the blacksmith shop were points at $.20 each and sharps at $.10 each. The nature of these items has not been indicated in the sources quoted.

In the store ledger a sales allowance was phrased "to abatement for hatt." An assignment of credit was "to your assination for your man Jacob." "Fustian" was a course cloth made of cotton and flax, and "nankeen" a cotton cloth usually yellow in color and "cotton full'd cloth"[12] was a best seller. An item popular with men customers was "black ball" which frequently was sold along with smoking tobacco suggesting that it may be chewing tobacco or snuff. Three charges to customers for "tickets" at $5 each were a puzzle until it was discovered that lotteries were legal for certain "good causes." One in Delaware in 1791 was authorized by the legislature to raise £1,000 for "setting up chambers in the new court house in the town of Dover."[13]

Conclusions

Middletown, Delaware, in 1794 appears to have been a busy, thriving village, with an economy closely tied to that of Philadelphia. Merchandise available to the people of Middletown included many of the basic commodities which are used in the United States today. Most of these were local and regional products but some, such as window glass, linens, chalk, silk, coffee, tea, gunflints and gin were imported. Except for the omission of television and automobiles and

some other readily dispensable items, the people were as well supplied with the necessities and comforts of life as we are today.

Appendix A

Rogers & Clark
General Store, Middletown, Delaware — 1794 to 1796
Price List of Products and Services

Bark, per oz.	46⅔¢
Barrells, flower (flour), each	26⅔¢
Bed cord	40¢
Bed ticker (bed tick)	$4.50, $5.33⅓
Beef, per lb.	4.4¢, 5.3¢
Black ball (?)	13⅓¢, 30¢
Blankets	$4.44
Board (quantity not specified)	$2.00
Bonnett	$4.00
Book	50¢, 96⅔¢
—muster	66⅔¢
—spelling	16⅔¢
—testament	36⅔¢
Bootlegs	$1.66⅔
Boots, pair	53⅓¢
Brandy, pint	17.8¢
gallon	$1.20
Brush	42¢, 50¢
—pair	86⅔¢, $1.11
Brush and comb	56⅔¢
Buckels	33⅓¢, 53⅓¢
	93⅓¢, $1.11
Buckwheat, per bu	60¢
Butter, per lb.	11¢, 13⅓¢
	14.4¢
Buttons	22.2¢, to $1.06⅔
—Shirt buttons	26.7¢
Callamanco (probably calomel	$2.67
Candles	50¢
Cards	50¢
Chalk	3⅓¢
Churn	93⅓¢
Cigars (segars)	$1.00
Cloth	
—Baze, per yd.	$1.40
—Binding	8⅓¢
—Cotton full'd cloth	70¢
—Flannell (flannel)	$2.00
—Fustin (fustian) a course cloth made of cotton and flax	
—Hemp	$1.33⅓
—Lining	25¢
—Linnen, per yard	53⅓¢
—Muslin	62.2¢

—Nankeen, a cotton cloth usually yellow in color	$1.00, $1.53
—Oyl cloth	$1.20
—Silk, per scanes (skein)	6⅔¢
Coardwood (cordwood) colling per cord	40¢
Coat	$1.53⅓
—for making	$1.80
Coffee, lb.	24.4¢, 25¢
Coffee cups	$2.00
Coffee mill	$1.60
Comb	
—Cricket comb (?)	16⅔¢
—Fine comb	16⅔¢
Corn, per bu.	46.7¢, 50¢, 51.1¢
Coverlid (a cover for a bed, quilt)	$2.00
Cow, red	$12.00
Cow and calf	$16.00
Dy (dye) pott (pot)	33⅓¢
Earthen dish	7.8¢
—pott	10¢, 11¢
Fan	13⅓¢, 30¢
Fishing lines	74½¢
Flaxseed, per bu	60¢
Flints, each	2.2¢
Flower (flour) — per lb.	4.9¢
per bu.	$6.08⅓, $6.13, $6.40
Fur, muskrat, per skin	26⅔¢
Garters	6⅔¢
Gin, per quart	$1.00, $1.20
Gloves	44.4¢, 53⅓¢
Handff (handkerchief	80¢, $1.13⅓
Hatt (hat)	$1.16⅔, $3.33⅓, $3.66⅔
fur	$4.00
ladies	$3.00
fine	$4.00, $4.30, $5.00
Herring, each	2¢
Hide, per lb.	4.4¢, 5¢
Hog, per lb.	5¢
Hogshead	$1.40, $1.50
Hauling — one day	$2.22
corn, per bu.	4.4¢
flaxseed, per bu.	6⅔¢
load of goods	$1.66⅔
load of goods from landing	86⅔¢
Indigo	13⅓¢
Inc (ink) powder	13⅓¢
Inc (ink) stand	50¢
Jar, stone	66⅔¢
Jug	17.8¢
Lard, per lb.	11.1¢
Lead	60¢

Lock	33⅓¢, 62.2¢
Moccins (moccasins)	$1.74
Molasses, per gal.	65⅓¢, 73⅓¢
Mugs	66⅔¢
Musket	$4.96, $5.00
Neadles, packet	25¢
Padlock	55½¢, 60¢
Paper, 1 quire	24.4¢
Pastboard, per piece	7.8¢
Pink root	13⅓¢
Pins, per packet	16⅔¢, 20¢
Pitcher	50¢
Pipe and tobacco	11⅔¢
Plow	$1.66⅔
Pork, per lb.	6¢
Powder	27⅓¢, 40¢
Raisons, (raisins), per lb.	4.4¢
Rent of Store, 1 year	$66.66⅔
Ribben (ribbon)	16⅔¢, 20¢
Rosin, per lb. — purchased	4.4¢ } 50% mark up
sold	6⅔¢ }
Rum, per qt.	20¢, 31.1¢
per gal.	$1.27
Ry (rye), per bu.	60¢, 80¢
Saddle	$7.00, $11.33⅓
Salt, per bu.	93⅓¢
Salt peter	26⅔¢, $1.50
Shaving box	33⅓¢
Shawl	93⅓¢, $1.00, $1.16⅔, $1.33⅓
Shirts	33⅓¢, 46⅔¢
Shoos (shoes)	$1.11, $1.13, $1.42
heals (heels), pair	6⅔¢
Shott (shot)	12.2¢, 39¢
Sifter	36⅔¢
Sissors (scissors), per pair	13⅓¢, 14.4¢, 16⅔¢
Sow and pigs	$4.67
Skillet	36⅔¢, 40¢, 43⅓¢
Snuf box	9¢
Slate	26⅔¢
Soap	13⅓¢
Spectacles	53⅓¢, $1.07
Spirits (whiskey?), per gal.	$1.11
Spoons	$1.10
teaspoon	22.2¢
Spices — chocolate	22.2¢
cinnamon	10¢, 11¢
ginger	19¢
mustard	13⅓¢
nutmeg	13⅓¢
pepper	27.8¢
starter, per dose	10¢

Stockings	62.2¢, $1.00, $2.00
hemp	$1.27
Sugar, per lb.	15⅔¢
per loaf	$2.02
Tallow (quantity not specified)	
Tea	26⅔¢
hyson, ¼ lb.	55½¢
Teapot	31¢
Thimbol (thimble)	6⅔¢
Thread	4.4¢, 6⅔¢
Tickets (lottery) each	$5.00
Tobacco — purchased, per lb.	12.2¢ } 64% mark-up
sold, per lb.	20¢ } 64% mark-up
Tobacco box	16⅔¢
Traps	62.2¢
Trunk	$3.66⅔, $5.00
Tukin (?)	$6.00
Tumbler	9¢
Twine, skein	27.7¢
Twist	6⅔¢
Walebone (whalebone)	9¢
Wheat, per bu.	$1.31, $1.33
Window glass, per piece	$8.23⅓
Wine, per bottle	37.8¢
port, per pint	22.2¢
Whip, buggy	$3.00

Appendix B

John Reynolds, Esq.
Blacksmith Business 1799 - 1800
David Smyth, Blacksmith
*Price List of Products and Services**

*converted to US dollars @ rate
9 penny = 10 cents
7'6 p = $1

Ax, laying (to lay an axe is to weld a new piece of steel into the body of the old axe that has been worn out)	66⅔¢, 75¢
broadax	$2.00
iron & steel ax	83⅓¢
upsetting	26⅔¢
Axil (axle) each	$1.06⅔
Axiltree for wheel	26⅔¢
Band on waggon wheel	33⅓¢
Bolt	13⅓¢
for floodgate, per pound	12⅔¢
for window, each	25¢
Buckel (buckle), harness	13⅓¢
carriage, large	16⅔¢

Briddle, (bridle) bit	16⅔¢
Chane (chain) per foot	25¢
Chimny (chimney) irons, per lb.	11¢
Clevis, Laying (a cuff at the end of the plough-beam to which the singletree is fastened)	66⅔¢
three knotched	$1.00
Clouts (patchplate of iron) each	25¢
clout for cart	13⅓¢
Coather (?) or Coathis, laying	$1.00
sharpening	20¢
Cotter (?), laying	$1.00, $1.10
dressing	33¢
pointing	50¢
Cupples (?) pair	25¢
Dog for sawmill	25¢
Dog fork, (iron bar with bent prong for grappling logs)	25¢
Dung fork	33⅓¢
Dung shovle (shovel)	1.33⅓¢
Esshook (probably an S hook)	10¢, 13⅓¢
Flat iron	50¢
Flesh fork	24.4¢
Friszen (?)	20¢
Frosting horse (placing frost nails in hooves to prevent slippage)	16⅔¢
Fryan pan	80¢, 93⅓¢
Fusing for gun lock	25¢
Gate hinges, pair	$1.50
Gridiron	$1.20, 1.66⅔
Gudgon (a metal pivot on end of beam, axle, etc. on which wheel turns)	
for wheelbarrow, set	40¢
gudgon with ring	25¢
Gullet plate (lower end of horse collar)	50¢
Gun scraper and brick pin	50¢
Handirons (pair)	60¢
per pound	13⅓¢
Handle for coffee mill	20¢
Handle for tea kettle	25¢
Harp (Bullingers?)	$50
Harrow teeth, sharping each	2.2¢
Hoe, new	$1.00
laying	50¢
grubbing	66⅔¢, $1.66⅔
sharpt (sharpened)	6⅔¢
upsetting grubbing hoe	33⅓¢
Hole fast for bench	$1.25
Hooks for hinges, each	16⅔¢
Horss shoss (horseshoes), new each	25¢
removes each (reforging old shoes?)	13.5¢, 14.4¢
new, with steel toes each	30¢
Iron (purchased) old, per lb.	2.2¢
new, per lb.	6⅔¢

new bar, per lb.	5½¢
Kitch (catch) for door, each	10¢
Knife	14.4¢, 30¢, 36⅔¢
cheese knife	50¢
drawing knife	$1.00
flesh knife (used in fleshing skins)	24.4¢
knife and fork	$1.20
pen knife	24.4¢, 25¢
Lamp iron (candlestick?)	50¢
Linch pin (a pin put in the spindle of the axle of vehicle to keep the wheel on)	20¢
Meat spit, mending	20¢
Mill jack	$2.50
Mill pick (tool for giving millstone corrugated surface)	
laying	53⅓¢
dressing	12.2¢
sharping (sharpening)	12.2¢
stuting	80¢
Moves (revolving part?)	7.2¢
Nails, per gross	13.3¢
per pound	33⅓¢
brad nails, each	.56¢
cart nails, each	3¢
clant nails, each	1.12¢
frost nails, each (for horses hooves to prevent slippage)	.68¢
hobb (hob) nails, gross	26⅔¢
horse shoe nails, each	1.12¢
sprig, each	.44¢
spikes, per lb.	16⅔¢
tin nails, each	4.44¢
Nibb iron for cradle	25¢
Nut for screw	6⅔¢
Ox yoak (yoke), mending	16⅔¢
Pick plains (?)	98⅓¢
Pitchfork	50¢
Plating horse	85¢
Plow plate	25¢
Pot rack	$1.00, $1.53⅓
Points (?)	20¢
Rivit (rivet) and bur, set	4.4¢
Screw, per lb.	16⅔¢
cutting	6⅔¢
Sharps (?) each	10¢
Shear, new 23½ lb., per lb.	17.7¢
laying	92⅔¢, $1.00, $1.33⅓
Shewing (shoeing) horse, per hoof	25¢
Shewing horse, 4 removes	50¢
Shovel	$1.20, $1.26
fine shovel	86⅔¢
Spaid, (spade) each	$1.20, $1.26⅔
Spurs, set	33⅓

Steal (steel) old per lb.	16⅔¢
Stapels, (staples)	6⅔¢
Sythe, new	$1.73
hanging for	25¢
plating	24.4¢, 25¢
Terry cap for timber wheel, mending	66⅔¢
Thumb screws, 3	$1.00
Tools, each	
chisell (chisel)	55½¢, 66⅔¢
clamp	22¢
cutting box, steel for	66⅔¢
file	13⅓¢
gimblet (gimlet)	6.7¢
hammer, laying	50¢
dressing	20¢
hatchet	86⅔¢, $1.00
small	75¢
mattack (mattock)	60¢
plane bit	20¢
rasp	62.2¢
saw handle	50¢
screw driver	10¢
thumbscrew	33¢
Tung cap for slay (sleigh)	50¢, 66⅔¢
welding tung cap	40¢
Washer for cart wheal (wheel)	25¢
Well bucket, ironed	50¢
Wheel barrow, hooking	25¢
Widge, (wedge), each	3⅓¢
new pair	$1.11
for carrage, laying	55½¢
for carrage, dressing	10¢
Wood, colling, per cord	40¢

FOOTNOTES

[1]Munroe, p. 139.
[2]Munroe, p. 54, p. 198, p. 268.
[3]Scharf, Vol. I, p 269, p. 291, p. 279.
[4]Munroe, p. 249.
[5]Scharf, Vol. II, p. 941.
[6]Conrad, Vol. II, p. 615.
[7]Baxter used the term "book-keeping barter" to define "an exchange with a time-lag" [p. 274] to differentiate it from pure barter, "truck, i.e. the simultaneous exchange of goods."
[8]Green, various pages.
[9]Tull, various pages.
[10]Webster, plate (verb), to shoe (a horse) with racing plates.
[11]Webster, remove (verb), the act of sesetting a horse's shoe.
[12]Webster, full (verb), to cleanse cloth from its oil or grease.
[13]Scharf, Vol. II, p. 1033.

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ON MERCANTILE ACCOUNTING IN PRE-INDUSTRIAL IRAN

Abstract: Iranian village accounting, which we studied by translating and analyzing the records of a trading house in the early twentieth century, was relatively unaffected by Western contact. The records were kept on a slightly modified cash basis, single-entry, with little distinction between business and personal transactions; this mirrors accounting practices in many "developing" societies. What was indeed unique was a distinctive set of numerical symbols, comprehensible to but a few initiates in each community, and whose primary goal was secrecy and privacy of the records. The system was used well before 1900 and is still in use in some rural areas today.

Although the study of the history of accounting has recently achieved a new height in popularity, research into non-Western accounting history has been slight. To be sure, acknowledgment is given to the Mesopotamians and other contributors to the "ancient" development of accounting, as well as to the Arabs for their numerical system. But later developments, particularly in that very "cradle of civilization" tend to be ignored. One can only speculate on the reasons: Few Western researchers are conversants with the languages used in the "third world." The preservation of accounting records through libraries and other means has been haphazard. Perhaps, too, there simply hasn't been that much interest in this subject, or at least it has been easier to channel research energy into more "obvious" developments in the corporate, industrial, Western world.

In this article, we examine a system of bookkeeping which *evolved* among the merchants of Iran (Persia) and which is still in use in some of the more remote villages. Its unique features merely dramatize what many of us already accept: that accounting systems arise to meet the needs of the particular situation.

The trading houses of Iran were primarily family-owned or at least very closely held enterprises. There was little distinction between

ownership and management, and little or no need for tailoring reports to the "usual" external readers: stockholders, bankers, or, for that matter, even to government. There was, however, a system of short-term credit, particularly for the sale and purchase of merchandise.

The senior author was fortunate enough to obtain access to some old Iranian accounting records, those of "The Trading House of Mirza Mahmood Foroughi and Sons" for the years 1897 to 1944 (1315 to 1363 on the Islamic lunar calendar).

The trading house was a family-owned business in the city of Kashan. (The authors wish to acknowledge the contribution of Mr. Ata'u'llah Foroughi, who not only traveled from Teheran to Kashan to find these records, but also literally unearthed them from a storage room in which they had served as partial sustenance for assorted rodents and insects!) Although there is no existing scholarly literature on pre-industrial Persian accounting, discussions with several aged Iranian merchants and businessmen lead us to conclude with relative certainty that these records were more or less typical of their time.

The Language of Business?

The actual words used in bookkeeping were in the Persian (Farsi) language. But the numerical symbols were written in "Siagh," a set of numerical abbreviations using combinations of Persian alphabetic symbols. Thus, although Arabic numerals had been used in Persia for centuries, the merchant class consciously *chose* to use Siagh for monetary recordkeeping. As the reader can see from Table I, Siagh resembles a kind of shorthand; the resemblance is more than coincidental.

Unlike Arabic numerals, which were in fairly common use, Siagh was known and understood by only a few people in any given community. It is difficult to learn, even more difficult to write, and particularly vexing to read if the handwriting is other than that of the reader. Thus, only the owner, partners (if any) and other trusted parties were able to read easily the accounts of a given trading house. Secrecy, which was an underlying premise in business conduct in Persia, was protected by the use of Siagh; in that sense, it served a thoroughly utiliarian end.

Not only the actual books of account, but most other business documents, invoices, and bills were in Siagh. Thus, even if competitors somehow gained access to one's records, they would find

the numerical information at least partly incomprehensible. In fact, we asked several veteran merchants knowledgeable in Siagh to assist in translating a portion of the books of Foroughi and Sons; there were still a few figures which they were unable to read or translate for us!

Since Siagh is essentially a kind of handwriting, no two people's Siagh are identical. Thus, if someone other than the usual trusted accountant were to make an entry in the records, it would be readily identifiable as unusual and suspect. Further, it was easy to tell, if different bookkeepers were used, who had made which entries. This facilitated internal control and what passed for internal audit.

Siagh was also used in business correspondence in order to maintain secrecy.

Talab and Vajdh

The books of Foroughi and Sons appear to have been kept in an orderly manner. They consisted of a journal and a ledger.

The journal is a book measuring 14 inches x 9 inches, with 2 columns per page; since two pages were used concurrently, we actually have a 4-column journal. The headings are: outgoing merchandise; incoming merchandise; cash payments; cash receipts (reading in the conventional Western manner from left to right; note, however, that Farsi is—like Abric—written from right to left). The two cash columns thus constituted a cash journal.

No transactions other than those involving *cash* or *merchandise* were journalized. In essence, then, a modified cash basis was employed, with accruals for purchase or sale of merchandise being the only accruals recognized. We can only speculate that other potentially accruable expenses and revenues weren't deemed to be material, since a mechanism for incorporating them could have easily been superimposed on the existing system.

A new set of journal pages was used for each day with the (lunar) date written at the top. It is evident that the system was by no means a complete double-entry system. Cash flows—receipts or payments—normally affected cash and one other account; payments in kind, which were surprisingly frequent, affected only one account. One concomitant of this is that no records were kept of assets other than cash, receivables, and inventory; in particular, fixed assets weren't recorded.

The daily journal for cash receipts began with the prior day's ending balance. At the end of each day, the new cash balance was

calculated and carried forward. There was a daily count of cash on hand (actually, in a safe), and any differences between book and counted balance were investigated.

There was no general ledger. The ledger which did exist, and which was the same size as the journal, functioned only as a subsidiary ledger for both accounts receivable and accounts payable. Thus, there was no accounting record of any liability other than (trade) accounts payable, and none at all for owners' equity.

Rather than keeping a single ledger page in the name of a debtor or creditor, the trading house kept a separate account for every batch of related transactions with an individual, so that, at any one time, we might find several different pages in the name of a particular supplier or customer. For example, the following accounts were all open concurrently in the name of a customer, Haji Heidar-Ali (the dates are from the lunar calendar):

—"Receivable from Haji Heidar-Ali for goods (sugar) sold to him on account on Muharram 10th."

—"Receivable from Haji Heidar-Ali for goods sold to him on account on Muhurram 25th."

—"Receivable from Haji Heidar-Ali for goods sold to him on account on Safar 3rd."

—"Receivable from Haji Heidar-Ali for goods sold to him on account on Safar 15th."

—"Receivable from Haji Heidar-Ali for goods sold to him on account on Rabi'ul'Avval 8th."

—"Receivable from Haji Heidar-Ali for goods sold to him on account on Rabi'u'Thani 5th."

When an account was completely settled, it was ruled and closed forever. A subsequent transaction with the same customer would engender the use of a new ledger page.

Each customer's account in the ledger had two sides. The right side was labeled "Talab" meaning "receivable;" the left side was labeled "Vajdh" meaning "receipts." (Literally translated, though, "Vajdh" means "amount of money.") Thus, "debits" were entered on the right-hand side of the account. For the particular business which we examined, almost all the receivables were from retailers, since the trading house was a wholesaler only.

Accounts payable, though few in number, were treated in the ledger similarly to accounts receivable.

The cash journal—that is, the two cash columns in the journal—served a dual function as the cash account for the ledger. Journal entries for cash receipts and payments were posted, in single-entry fashion—to the account of the particular debtor or creditor for the already existing sale or purchase on account. (Cash sales and purchases were not a business practice of this trading house.) Receipts or expenditures for other purposes, which were quite rare, were posted to special revenue or expense accounts. Of course, under this single-entry system, purchases and sales themselves were normally not entered into the ledger, so that construction of any kind of income statement would have been extremely tedious!

For control purposes, records were kept separately of the *physical* numbers of various inventory items, without appending any monetary valuation.

When a journal entry was posted to the ledger, the page number of the ledger was superimposed on the entry in red. (Red ink did not have the usual Western connotation!) In addition to a monetary amount (in rials usually, abbreviated as R or as Rls; occasionally in tumans, a tuman being 10 rials), each entry contained an explanation of the transaction, the name of the customer or supplier, and a weight or volume measure of the merchandise involved.

In rare instances, presumably at the discretion of management, separate accounts were kept for sales and purchases of certain merchandise transactions, a sort of direct-cost, job-order approach. Thus, an occasional ledger page can be found with a heading such as one of the following: "Purchase of wool from Boroujerd," "Sales of Boroujerd wool," "Cost of merchandise purchased from Yazd," "Sales of merchandise purchased from Yazd," where Boroujerd and Yazd are names of cities.

These few nominal accounts included all direct costs, such as transportation and commission, so that profitablity, on a gross margin basis, could be computed more easily, probably to facilitate future decision-making. Indirect costs were not allocated. Nominal accounts weren't closed to any sort of overall income account, and no owners' equity accounts were kept.

No financial statements were prepared annually—or at all for that matter! Overall profitability was never assessed, since a concept of income, based on matching or accretion or whatever, simply wasn't utilized. On a daily basis, the only flow calculation was the difference between cash receipts and cash payments.

As in the records of cash basis, closely-held enterprises in other countries, those of the Foroughi trading house frequently comingled

business and personal expenditures. For instance, among the cash payments for Shavval 12, 1352 (sometime in 1933 by our calendar), we find the following:

> "Mother's doctor and injection fee," "Fee paid to baker for family bread," "Mason's fee for the new house," "Tailor's fee for the small boys' suits," "The servant's cigarettes," "Dentist's fee for the younger brother."

We have included as appendices to this paper:

> A "glossary" of Siagh symbols; an excerpt from the journal for two days in 1944, translated into English by the senior author.

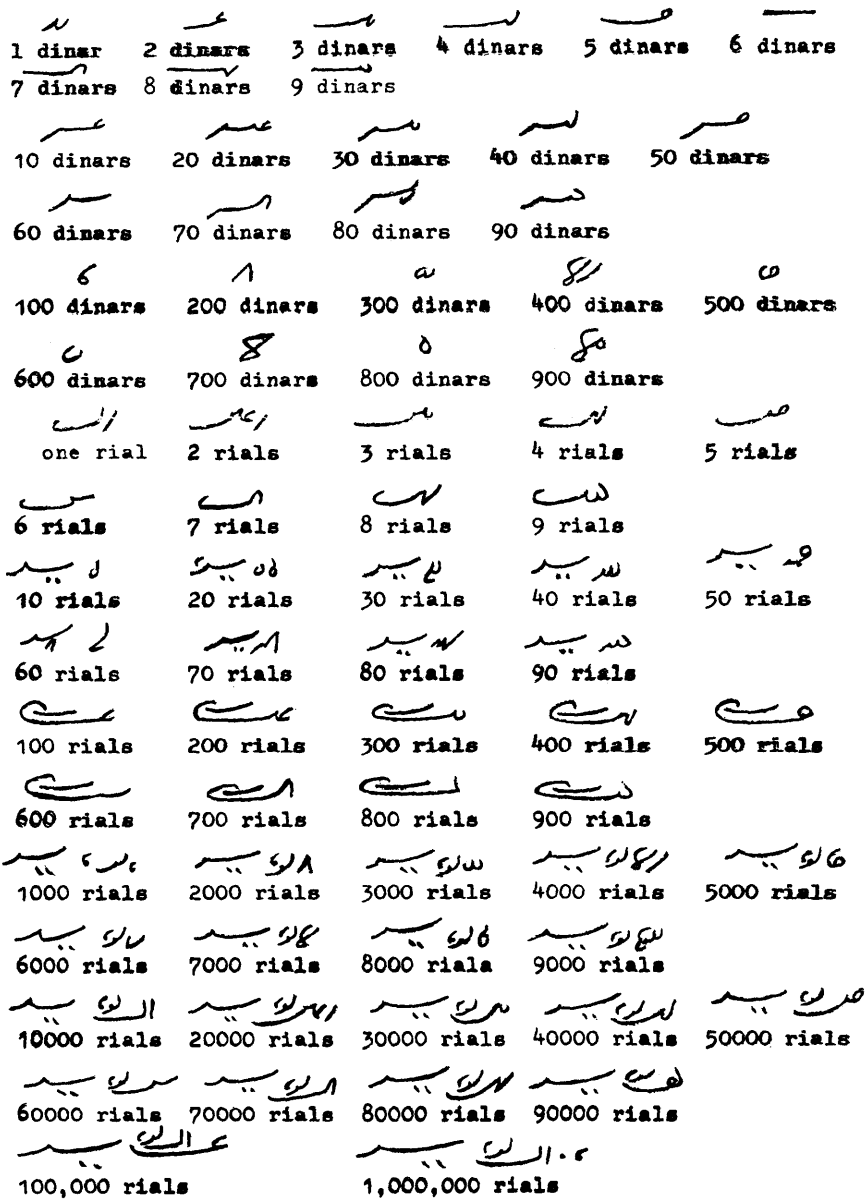
Conclusions

At the beginning of this paper, we pointed out the paucity of research (published in English, at least) on "non-Western" accounting. In many ways, Iran—particularly the villages and areas other than Teheran—is like a control subject in a laboratory experiment. It has been relatively "uncontaminated," at least in its accounting, by "Western contact;" Iran itself was not really the colonial enclave of any Western power. Of course, neither was it a Shangri-La; that is, it had not been completely isolated, either from the West or from its Asiatic neighbors.

The system of bookkeeping which developed in the villates, then, was both unique to Iran and not bizarrely dissimilar to systems used elsewhere. Its most striking characteristic is the "secret" numerical system. This certainly mirrors an aspect of the culture: a rather closed secretive and proprietary point of view. (Notice the reference to the "stranger" from Aran in the appendix.) One other aspect which is different from Western practices of modern times is the treatment of each transaction with a given entity as a separate venture, yet this may merely have been a matter of convenience and not a particularly important one at that. Some of the other characteristics: modified single-entry, no financial statements as we know them, commingling of business and personal transactions, can be found in many nations and contexts.

The system used by the Foroughi trading house is representative of the accounting systems and procedures most commonly used in Iran before 1900, and much more recently in some regions, since modern European (primarily English and French) practices spread only gradually. It appears to have sufficed for its time and place.

Siagh Symbols



BUSINESS JOURNAL

Date: Monday 23rd and Tuesday
Date: Monday 24th and Tuesday 25th Bahman, 1322
(February 13th and 14th, 1944)

Amount Rials	Cash Out	Ledger Ref.	Amount Rials	Cash In	Ledger Ref.
9800.—	Mr. Lame' for promissory note	1,339	18475.65	Beginning Balance	
.....	.....	.....	1000.—	Two items, Mohammad Agha	1,368
.....	.....	.....	.....	.....	.....
1540.—	Construction Exp.	2,52	(x) 500.—	Akbar Darbe Zanjeer for the Corn	1,374
.....	.....	.....	.....	.....	.....
.....	.....	.....	2123.—	M. Reza Malek Nia for raisins	1,339
50.—	Broker's fee	2,65	2000.—	Aunt's Hussain for the wheat	1,351
.....	.....	.....	1072.50	Stranger from Aran 3 items, for dates	x
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
2430.—	Ostad Reza the Shoe maker	1,37	1200	Fazel, for dates	1,331
.....	.....	.....	.....	.....	.....
63.—	Telephone Call to Arak	2,66	.....	.....	.....
450.—	Interest Expense	2,96	.....	.....	.....
30909.65	Cash closing Balance		16000.—	Ali Ghanned for Sugar	1,358
76811.15	TOTAL		.....	.....	.....
			.....	.....	.....
	Rest of Cash In's				
6000.—	.....	.....	2000.—	HadjiMasha-Allah for the wheat	1,338
500.—	V. Shekar Riz for the dates	1,373	1200.—	Jaberi for dates	1,373
500.—	Ali Mohammad for wheat	1,361	1000.—	Sadooghi for dates	1,364
.....	.....	.....	.....	.....	.....
(xx) 500.—	Agha Javad Khashani for the dates	1,367	.....	.....	.....
76811.15	TOTAL		.....	.....	.....
			4000.—	Ostad Abbas for raisins	1,37

KASHAN - FOROUGHI SONS

Date: 24th and 25th of Bahman, 1322

Amount Rials	Outgoing Merchandise	Ledger Ref.	Amount Rials	Incoming Merchandise	Ledger Ref.
	Raisins from Azad	2,122	.....	.....	.....
	.....	.....	20,000.—	M. Ebrahim-Expiry Bahman 28th.	1,37
	A. G. Toghani, 14 manns, at 6 Toomans per "mann", **two months**	1,27	.....	.....	.....
	Akbar Darbe Zanjeer, 47 manns at 6 Toomans **2 months**	1,374	2430.—	Ostad Reza	1,37
	.....	.....	.....	.....	.....
	Ostad Ghanbar, 27 manns at 6 Toomans, **2 months**	1,37	2000.—	Draft on Y. Hadji-Zadeh, one day after "sight".	
	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....
	Hassan D. E. 12 manns at 6 Toomans, **3 months**	1,37	2542.—	Ali A. Jahani	1,37
	.....	.....			
				Wheat	1,117
	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....
	Masha' Allah, 43 manns, at 6 Toomans, **2 months**	1,37	2000.—	Draft on Yoosef Hadji Zadeh, one day after sight	
	Dates	2,116			
1792.50	Hussain Ostad Ghssem 44 manns at 4 Toomans	1,364			
2650.—	Akbar Darbe Zanjeer, 66 manns	1,374			
821.20	Agha Javad Kashani, 20 manns	1,367			

NOTES:

1. Cash In's consist mainly of two types of transactions: "cash sales" and "cash received from debtors for previous on account sales". The cash sale item of Rls. 1072.50 to a "stranger" has not been posted to any ledger account. Other cash receipts have been posted to their respective customers' accounts For example, Rls. 500 received from Akbar Darbe Zanjeer (x), for corn previously sold to him on account, has been posted to his account under no. 1,374 in the ledger. Or, Rls. 500 received from Agha Javad Kashani (xx), for dates previously sold to him on account, has been posted to his account under no. 1,367 in the ledger.
2. Cash out items are expenses and fees such as the construction expense item of Rls. 1540; or they are money paid for various notes and accounts payable and to different creditors. Each of these, in turn, have been posted to their respective accounts in the ledger.
3. The cash in/out side of the journal has been totalled at the end of the day (February 14th) and closing cash balance has been verified and recorded as under.

February 13th beginning balance	Rls. 18475.65
Total Cash in on Feb. 13th and 14th	" 58335.50
TOTAL	76811.15
Total cash out	45901.50
Closing cash balance—February 14th.	30909.65

4. A major part of the outgoing merchandise transactions have been recorded in "siagh". All of these items are (apparently) sales made on account with an average collection period of two months. Others for which the amounts have been written in Arabic numericals are (probably) sales of short term or cash nature.
5. The "Incoming Merchandise" column includes all kinds of "non-cash" such as collectible drafts and notes.
6. A "Mann" of Kashan equalled six kilograms.

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ACCOUNTING FOR LES FORGES DE SAINT-MAURICE 1730-1736*

Abstract: From a capital budget, an operating budget and a partnership agreement prepared almost 250 years ago in New France, a cash Budget and balance sheets are prepared to help in an analysis of the viability of the company. This investigation into the feasibility of the project discloses a quite sophisticated use of managerial accounting. The original partnership failed, but eventually the company became a successful venture.

Accounting played a prominent role in the establishment of Les Forges de Saint-Maurice between 1730 and 1736. This is illustrated by a capital budget and an operating budget, prepared to support a request for a much-needed loan. In this paper, after an opening balance sheet is drawn up from various bits of data, the two budgets are examined and recast into more traditional forms. They are then analysed to ascertain whether decisions might have been different if present day techniques had been used. To aid in the conclusions drawn, recourse is made to an agreement between the partners. Other parts of this agreement are also examined for their accounting content. Using all the information, a new balance sheet is then prepared. It is possible to conclude that mistakes were made that may have been avoided if all the proper questions had been asked, but there is no doubt that the original concept was very sound.

Background

European explorers were first lured to North America by hopes of gold and other exotic riches, but it wasn't until 200 years after Jacques Cartier sailed up the St. Lawrence River that a more prosaic, but more useful, metal was mined and worked in New France.[1] This venture, Les Forges (ironworks) de Saint-Maurice,

*A great deal of original research on Les Forges de Saint-Maurice has been done by Cameron Nish, Professor of History at Concordia University, Montreal, Canada, and a leading authority on the ironworks. Although liberal use has been made of his work, it must be emphasized that the author is responsible for errors of translation and any interpretations of the data.

was started in 1730 a few miles from Three Rivers, a town half-way between Montreal and Quebec City. Although this was the first major manufacturing enterprise in New France, it was, by no means, the first in North America. This distinction is borne by a smaller venture established about 90 years earlier at Saugus, near Boston, Massachusetts,[2] approximately 400 miles southeast of Three Rivers. Several reasons can be given to explain why Saugue was started only 20 years after the first settlers arrived, while it took almost 10 times as long for a similar attempt in New France. Differences in population growth,[3] reasons behind the emigration from the old countries, the "Puritan Ethic" versus exploitation,[4] harsher weather conditions, longer trade routes, and the needs and attitudes of the mother countries[5], were all contributory factors. More important for the purpose of this paper, however, was that the American undertaking was "private enterprise", while the French enterprise required government approval at every step. This bureaucracy may have hampered industrial growth but does offer some compensations for accounting historians, since a great deal of the early information on Les Forges is available from letters of government officials and state documents that have survived in archives on both sides of the Atlantic.[6] The Saugus story, on the other hand, had to be gleaned from court records, which, actually, only tell the seamier side of the operation.

The Beginnings

The first faltering steps towards the eventual establishment of Les Forges de Saint-Maurice were taken in 1730 by a Montreal merchant, François Poulin de Francheville. He requested a 20-year monopoly from the State for the purpose of setting up an ironworks. This request was quickly granted by Gilles Hocquart, the Intendant (director), who was anxious to develop the colony and needed iron for a shipbuilding project near Quebec City. More important, de Francheville, as a true entrepreneur, did not initially ask for a subsidy or any government grant, very unusual at that time. He did, however, ask for help in recruiting experienced forgemen. This request was readily granted by the Crown, which sent two artisans from France at its own expense. By 1732, ore samples had been tested from the proposed site of the ironworks at the seignory (estate) of Saint-Maurice, with excellent results. By the end of that year, however, de Franceville realized that he had underestimated the magnitude of the project. He had spent £9,244.9s.5d[7] about one-third of his capital, and the forge was nowhere near ready for

operation. To spread the risk and obtain additional capital, de Francheville decided to form a company and to involve others in the project. At the same time, he asked the French government for a loan of £10,000. The new company was set up with 20 shares, worth 1s each, de Franceville keeping 10 shares for himself. The other partners being:

> Pierre Poulin — De Francheville's brother and a Quebec City merchant François-Etienne Cugnet — a director of Domain d'Occident (western land), a member of the Superior Council of the colony, and shortly thereafter, first counsellor Bricault de Valmur — Hocquart's secretary, and Ignace Gamelin — the son of a Montreal fur trader.

The price of the seignory to the company was fixed at £6,000, but this amount did not have to be paid as long as payment of £300 per annum was made. (This is being interpreted as an open-end mortgage at 5%.) In April, 1733 the loan of £10,000 was granted by the government. From the data given in the previous paragraph it is possible to prepare the following opening balance sheet of the company.

Les Forges de Saint-Maurice
Opening Balance Sheet
April 1733

Assets		Liabilities and Capital	
Cash	£10,001	Loan payable — State	£10,000
Land	6,000	Loan — de Francheville	9,244.9s.5d.
Construction in progress	9,244.9s.5d.	Mortgage @ 5%	6,000
		Capital — partners	20s
	£25,245.9s.5d.		£25,245.9s.5d.

With the new infusion of capital, the construction of the forge progressed favourably, but unfortunately de Francheville fell sick and died in November, 1733. As can be expected, this complicated matters considerably, particularly since the government loan had been granted to de-Francheville personally. Hocquart asked Cugnet to take over the operation and early in 1734 there was finally some production. The iron, however, turned out to be of poor quality and the forgemaster, who had been brought over from France as an expert, confessed that he didn't have the required skills to run the ironworks.

By this time, £21,483 had been spent on the undertaking and there was uncertainty about the source of further funds. Although details

are not available, it must be assumed that this £21,483 consisted of the £10,000 from the government, £9,244 as originally spent by de Francheville, with the balance of £2,239 coming from the five partners. In spite of this setback, Hocquart was convinced of the feasibility and desirability of the project. He asked the French government to find two new master forgemen. One, François-Pierre Oliver de Vézain was persuaded to come to the colony by a bonus of £1,200 plus an annual salary of £2,400, exorbitant payments for that time. Another master ironworker, Jacques Simonnet, was also influenced to join the operation by the promise of an equal share in the venture. Although Hocquart was prepared to abandon the Saint-Maurice site and lose the total investment, de Vézain felt, after a detailed survey, that the best available location had been chosen, even though it would be necessary to scrap most of the existing facility. By late 1735, de Vézain had prepared a detailed estimate of the capital costs necessary to set up a proper ironworks, as well as an operating budget.

The Capital Budget

The capital budget, shown in translation as Appendix A, is quite sophisticated, although in some places, the format makes it a little difficult to follow. To alleviate this difficulty, the following condensation has been prepared.

Les Forges de Saint-Maurice
Capital Budget
To prepare project for operations

Furnace		
Stonework	£6,253.6s.8d.	
Housing and sheds	1,200	
Bellows, equipment & tools	2,100	
Canal, drains, etc.	1,500	
Coke shed	1,200	
Total cost for furnace		£12,253.6s.8d.
Stone crusher and washhouse		600.0 .0
Forge (Refineries, boilerhouse & workshop)		
Stonework	£1,300.0. 0.	
Frame & covering	2,000	
Outhouses	600	
4 ovens	820	
Equipment & tools	5,830	

Canal, drains, etc.	2,000	
Coke bunker	1,200	
Blacksmith shop	1,100	
Total cost for forge		14,850.0. 0.
Moulds, cauldrons and other cast iron		1,000.0.0.
Packhorses (16)		2,400.0.0.
Forgemaster's house		4,000.0.0.
Storehouse, stable & oven		900.0.0.
Total estimated cost of project		£36.003.6s.8d

The capital budget seems to have enough detail and preciseness to permit a reconstruction of the furnace and all the other trappings even today. A few of the amounts are calculated to the dinari but generally they appear in round figures. Later overruns proved many of the items to have been underestimated. It is obvious, from the budget, that the ironworks would be part of a "company" town. Included in the estimate was a home for the forgemaster listed at £4,000, over 10% of the whole construction cost, while facilities for the workers were already on site from the earlier construction. A later account, by a visitor to the ironworks, painted a glowing picture of the master's house, calling it the "grande maison des forges".[8] A foundry was also provided for, but the amount of £7,976.13s.4d. was not included in the budget, since it was not to be built until a definite market exisited for its products. A hint of possible future problems is discernible at the end of the report where mention was made of some extraordinary work that would be required, but without any dollar amount being given. The total estimated cost for the ironworks including the forgemaster's house, but omitting the foundry and the extraordinary work was £36,003.6s.8d.

The Operating Budget

As previously indicated, an operating budget was also prepared, see Appendix B. This was not in traditional form and profit was not computed although revenues were estimated. The expenses were grouped by work centers, under cast iron production, refineries and boilerhouses and foundry, but foundry expenses were not included in the total. The plan was to work the mill for only eight months in the year initially, since the refineries as projected could not accommodate a full year's production of cast iron from the furnace. By the same token, the market for cast iron was unknown,

and the limited operation would prevent a large surplus of this material. It would seem that an eight month operating period was a prudent decision because the severe winter conditions in the area would tend to impede operations and increase costs.

The operating budget is recast below, following an income statement format:

Les Forges de Saint-Maurice
Estimated Income Statement for One Year
Based on eight months production

Sales:			
200,000 lbs. @ £200/1000 (local)		£40,000	
400,000 lbs. @ £140/1000 (France)		56,000	
100,000 lbs. iron objects @ £200/1000 (local)		20,000	£116,000
Cost of Sales:			
Raw material			
Iron ore	£ 6,000		
Coke	34,400		
Limestone	1,000		
Soil & grease	650	42,050	
Direct labor			
Furnace wages	6,800		
Refining wages	9,700		
Smelting wages	2,700	19,200	61,250
Gross profit			£ 54,750

Several shortcomings are obvious in this budget. As the budget indicated, factory expenses such as depreciation and maintenance were not covered, nor does there seem to be any provision for selling and administrative expenses. The partnership agreement does, however, shed some light. The two "working" partners, Olivier and Simonnet, were to get salaries of £3,000 and £1,500 per annum, and these amounts were included in Direct Labor in the budget. Cugnet and Gamelin were expected to manage the affairs of the company in Quebec City and Montreal, respectively, without remuneration until the business became sufficiently extensive. It is further stipulated that all other operating expenses such as administrative, selling, transport, clerical and general costs were to be met by the company and deducted before any profit sharing. No estimates were provided, however, and it is impossible to arrive at a reasonable profit estimate.

Also worthy of note was the differential pricing being recommended. This type of pricing can be justified in the circumstances. The iron shipped to France would have to compete with that produced by the local French works and with imports from Spain and Sweden. Conversely, transport costs from Europe to New France would tend to bring the actual selling price in the colony up much higher, no doubt close to the price quoted.

Cash Budget

From the information presented in the two estimates, it is possible to prepare a cash budget. There is no record of this having been done, but it is deemed important since the de Francheville's death, the financing would have to be undertaken by Cugnet and the others.

Les Forges de Saint-Maurice
Cash Requirements
To construct ironworks and for first year of operations
(Based on estimates of 1735-36)

Cash required for building of ironworks		£ 36,003
Cash required for eight months' production		61,250
Payment due to Mrs. de Francheville, etc.		9,244
Current requirements		£106,497
Payment due for seignory	£ 6,000	
Loan payable to State	10,000	16,000
Total cash requirements		£122,497

Even though this cash budget was prepared from the known information, certain assumptions had to be made. There was no indication of when the payment to Mrs. de Francheville and the former partners had to be made. The position taken was that this was a current liability, due immediately. The payment due for the seignory was definitely postponable, subject to a rental charge of £300 per annum. This payment can, therefore, be omitted from the budget, but is included for the sake of completeness. The situation is similar for the £10,000 loan from the State. As indicated in the partnership agreement, the partners had underwritten this loan. They subsequently asked the government for a deferment, which was granted. Although it is tempting to use hindsight with the amount for the construction of the ironworks, the estimate is accepted as given. This figure has to be considered as the best avail-

able information at the time. A more debatable amount is the cash requirement for the initial production. This has been shown as £61,250, the amount of the estimate for 8 months operation, with no provision for cash inflow from income. The line of reasoning taken here was that since the ironworks had not as yet gone into production:—

1. Time was required to complete the facilities.
2. There was bound to be some undetermined start-up cost.
3. Initial production would tend to be slow as the labor force became familiar with work rules.
4. Production would also tend to be slowed by the debugging and malfunction of the new, unfamiliar equipment.
5. No provision was made for working capital. There would, of necessity, a time lag between:-
   - i Production
   - ii Building up of inventory
   - iii Sales
   - iv Transport of merchandise to customers
   - v Collection of receivables

For all these reasons, it has been decided to show the first year operating cost as a cash requirement without any offsetting sales revenue.

It is obvious that the principals had made a similar, but possibly more optimistic projection, because they asked the State for an additional loan of £100,000. If one considers all the factors at the time of the request, this amount sounds reasonable and more than adequate to complete the ironworks and start the operations. It can also be assumed that some of the partners, particularly Cugnet and Gamelin did have other resources. And once over the hurdle of the capital outlay and the start-up of production, on the basis of the projections, the cash flow would have been very good indeed.

The government seemed to have agreed with the plans by granting the loan in the form of a drawing account against the Treasury of the Navy. Aside from any other considerations, the time-frame for repayment of the loan was relatively short. With the original loan of £10,000 plus the new one of £100,000, and anticipated profit of £54,750, a payback period of a little over two years was possi-

ble under ideal conditions, once the mill was in operation. An added incentive to a quick repayment of the loan was the clause in the partnership contract that required reimbursement to the Crown before any distribution of profits.

The Contract[9]

The new partnership agreement was signed on October 16, 1736 by Cugnet, Gamelin, Olivier, Simonnet and Thomas Jacques Taschereau, Councillor of the Supreme Council of Quebec and Treasurer of the Navy. At contract date, drawings against the loan had already mounted to £42,970, and a note was signed by the partners in favor of the Crown for £52,970, which included the original £10,000.[10] From the contract, there is no doubt that a partnership was being formed, with unlimited liability and personal involvement, but with provisions for partners to disperse of their shares. It would seem that even though the corporate form of enterprise was well-known at this time,[11] no attempt was made to acquire this privilege.

The contract raises another matter of interest to accountants. When discussing possible separation of a partner from the business, reimbursement was to be by way of taking an inventory. No further information was given specifying how this is to be done, but this method was in keeping with the accepted accounting practice of that time.[12] Balance sheets were not drawn up on a regular basis, but when required, an inventory of all assets was taken and the net worth of the business was this total less the liabilities. Davis, discussing this method in 1888, accepts cost price, replacement cost at time of inventory and estimated value for damaged goods as permissible valuation Bases[13] — shades of current value accounting! Nevertheless, it would have seemed wise for the contract to specify the method to be used to avoid future disagreements.

Also of interest to accountants is the prescribed formula for dividing profits and losses. The following information is pertinent:

1. Profits and losses to be divided in proportion of original investments, i.e. Taschereau — 10%; others — 22½% each.
2. Olivier to receive £3,000 and Simonnet £1,500 per annum after all other expenses have been deducted, but these salaries are not to be considered administrative expenses. Each is responsible for his portion of the other's salary.

3. Other, non-listed, administrative expenses to be met by company and to be deducted before division of profit.
4. Reimbursement of loans from Crown before any profit shared.

As long as the net profit exceeded the salaries to Olivier and Simonnet and the administrative expenses, the division of profit would present no difficulty.

This is shown below, based on the estimated income statement.

Gross Profit (after salaries to Olivier and Simonnet)		£ 54,750
Less: Administrative expenses (estimate)		24,750
		30,000
Add: Salaries to Olivier and Simonnet		4,500
Profit to be divided		£ 34,500
Divided as follows:		
Olivier (£3,000 plus 22½% of £30,000)	£9,750	
Simonnet (£1,500 plus 22½% of £30,000)	8,250	
Taschereau (10% of £30,000)	3,000	
Cugnet (22½% of £30,000)	6,750	
Gamelin (22½% of £30,000)	6,750	£ 34,500

Note: None of these profits, beyond the £4,500 in salaries, could be withdrawn until the loan from the government had been repaid.

A Balance Sheet

From the various bits of information in the contract and other data accumulated, it is possible to prepare the following opening balance sheet as at the date of the new partnership.

This balance sheet reveals that the partnership was starting out in a negative position, because of the commitments undertaken from the previous business. The partners' expectations, though, must have been very high, because they knew when they signed the contract that a good part of the original construction was useless. It can be argued that the partners' risk was minimal with the government putting up the £100,000, but there was unlimited personal liability and all the loans had to be repaid before any drawings could be made. It will be seen in the following brief summary of the subsequent history of Les Forgas that one partner, at least, had anticipated too much.

Les Forges de Saint-Maurice
Opening Balance Sheet
October 16, 1736

Assets		Liabilities	
Cash on hand	£ 1	Loans payable — previous partners	£ 9,244
Land	6,000	Note payable — State (note 2)	52,970
Construction in progress (note 1)	42,970	Due re seignory (note 3)	6,000
			£ 68,124
		Partners' equity	
		Opening capital £ 1	
		Accumulated deficit (19,244)	(19,243)
	£48,971		£ 48,971

Note 1 There may have been value attributable to part of the construction completed by the previous partnership. Any amount so determined would increase the "construction in progress" and decrease the "accumulated deficit".

Note 2 The company was authorized to draw an additional £57,030 from the Treasury of the Navy against construction costs and operating expenses. This loan was repayable before any drawings by partners, other than salaries to Olivier and Simonnet.

Note 3 A rental of £300 per annum was payable until this liability had been paid.

Aftermath

Les Forges de Saint-Maurice did finally start producing in 1738, but costs escalated and sales did not meet projections. This resulted in a takeover of the ironworks by the government in 1741 and the personal bankruptcy of Cugnet in the following year. The other partners, however, were able to dispose of their personal property and seem to have gotten off scot-free. Eventually, however, Gamelin and Olivier settled with Cugnet's estate. The government operated Les Forges until 1759, at which time it fell under British military control for several years. The property was then leased to various tenants who met with varying degrees of success. During the years 1793-1846 the lease was held by Mathew Bell, who it seems worked the mill very profitably.[14] Les Forges was then sold

to other private interests who continued to operate until 1883. During the almost 150 years that the ironworks were in existence, they experienced good times and bad, but they did supply the iron products needed in Canada. It has also been shown in a recent scientific study of some iron castings from the mill that the level of its production was of the highest quality.[15]

There may be areas for further research in the records of Les Forges de Saint-Maurice, particularly for the period under French control. It may even be possible to do some analysis on actual costs and production as compared to the estimates given herein, but this will have to await further translation and study. Unfortunately, records after the French era are very sketchy and may have been lost forever.

Concluding Remarks

This paper has illustrated a capital budget and an operating budget prepared almost 250 years ago, using methods which compare very favorably with those used today. The available documentation does not carry the analyses to the same depth as it would at the present time, but the estimates seem to have been adequate for the purpose. Using the figures available, a cash budget and a balance sheet were prepared that might have aided the partners in their decision-making, if they had been prepared originally. But it must be realized that this was a capital-intensive enterprise being built for the first time in a young colony with inexperienced management and labour. Even today cost overruns and financial failures are not unknown in spite of the sophisticated techniques and costly analyses performed, so it is difficult to be too critical. Also bear in mind that in spite of government support, according to the partnership agreement, all the partners staked their all in this venture, not being able to hide behind the corporate veil.

It is worthy of note that the concept of the ironworks was sound. Once into production, the mill was successful with profits being very high in some years. And most important, for almost 150 years, Canadian needs for high quality iron products were supplied by Les Forges de Saint-Maurice.

Translation[16] *Appendix A*

"Projected expenses to be incurred in setting up and operating the ironworks in Canada", A.P.C., Series C11A, Canada, the St. Maurice Forges, vol. 110, tome 1, pp. 323-334.

Firstly

Set up costs.

Construction of the furnace.		
For the furnace structure, 26 feet square by 28 feet high including the foundations, with a capacity of 87⅓ cubic fathoms(1), at £50 per cubic fathom, the sum of	4366.13.4	
For the large hanging each 20 ft in breadth by 2 ft. thick and 11 ft. high, on four walls, making 24⅘ square fathoms at £16 per square fathom	391. 2.3	
For the small hangings each 10 ft. in breadth by 1½ ft. thick and 11 ft. high on four walls, making 12⅗ square fathoms at £16 per square fathom	195.11.1	
10,000 bricks for the walls at £40 per thousand	400	
For the fire bricks for the inside walls of the furnace	600	
The pipes to keep the wall of the furnace dry	300	
Total for the stonework	6253. 6.8	
The housing for the furnace over the crucible opening, to shelter the bellows and hoists; this being 35 ft. long and 20 ft. high, covered and roofed with layers of planks and wooden tiles, this	600	
The furnace shed, covering the moulds 30 ft. wide, 30 ft. long and 20 ft. high, with walls and roof of layer upon layer of planks and wooden tiles, this	600	
The furnace bellows	800	
The blast-pipe, grease and flues	300	
The furnace equipment comprising wheels, pulleys and lanterns	600	
For the pokers and other tools	400	
For the canal, drains, flagstones and waterways	1500	
Shelter for the coke used in the furnace, 60 ft. long, 40 ft. wide, with a frame 10 ft. high supported by stakes and covered over with planks and wooden tiles	1200	
	12253. 6.8.	12253. 6.8.

For a stone crusher and washhouse for the iron ore, with wheel and machinery 600

Forge comprising two refineries, a boilerhouse, a metal workshop with all its tools, as well as weights for the hammers and mechanical presses.

The shelter for the forge, 90 ft. long by 40 ft. wide and 15 ft. high, whose frame is covered with layer upon layer of planks and wooden tiles.

For the stonework, 10 ft. high including the foundations, and 3 ft. thick making 108⅓ sq. fathoms at £12 per fathom 1300

For the frame and covering 2000

For the outhouses on either side of the shelter, where the mill wheels are kept, 90 ft. long by 10 ft. wide and 10 ft. high, supported by stakes covered over with planks and wooden tiles 600

Four ovens: two for the refinery, one for the boilerhouse and one for the metal workshop, each with stonework at the base 8 ft. square and 1½ ft. thick, including the foot thick foundations, with their chimneys 30 ft. tall and 1 ft. thick at the base, becoming narrower from the base to the opening at the top, only 1½ ft. square.

For the stonework of each oven, each 10⅔ fathoms, making in all 42⅔ square fathoms at £12 per fathom 512

For the chimneys, each 6⅔ square fathoms making in all 25⅔ square fathoms at £12 per fathom 308 820

For the four pairs of bellows and trimmings 1000

For the tuyeres, grease and flues 400

For the cast iron wedges used in operations 100

For the pokers, tongs and other tools 600

For equipment for the four ovens, consisting of axles and wheels 1200

For the hammer weights 1000

For the cast iron hammer 500

For the cast iron anvil 100

For the cords and pivots of the axle of the mechanical hammer 200

For the weights of the mechanical press 500

For the wrought iron hammer 200

For the cast iron anvil 30

For the canal, with its drains, flagstones and waterways	2000		
The coke bunker 60 ft. long by 40 ft. wide beneath the frame supported by pickets and covered over with planks and wooden tiles	1200		
A blacksmith's shop, 15 ft. square by 8 ft. high, covered with layer upon layer of planks and wooden tiles	300		
For the bellows	200		
For the anvil	400	1100	14850
For the forge and chimney	100		
For the tools	100		
		14850	
For the molds, cauldrons and other cast iron objects			1000
Foundry for fashioning all kinds of iron objects (2)			
The shelter, 36 ft. wide and 15 ft. tall, covered over with layer upon layer of planks and wooden tiles	2400		
Two outhouses to shelter the wheels, 20 ft. long by 10 ft. wide and 15 ft. high supported by pickets covered over with planks and wooden tiles	150		
For the 32⅔ square fathoms of stonework under the wheels at £12 per fathom	386.13.4		
For the wheels, pulleys and lanterns, wheel axles, chains and pivots	900		
For the pulley components and the outhouses with all the necessary tools and iron ware	500		
For the canal, drains, flagstones and waterway	1000		
An oven designed to heat the iron to be molten with reflected heat: 15 ft. long, 12 ft. wide, 12 ft. tall including the foundations and 1¼ ft. thick, with its roof of 20 square fathoms at £12 per fathom	240		
For the wire netting and cast iron covers	100	340	
A blacksmith's shop similar to the one at the forge, this	1100		
For a beam	100	1300	
For files and other tools	100		

For the house for the founder and his four workers	1000
	7976.13.4
Sixteen packhorses for construction work and carts, at £150 each	2400
A house for the forgemaster, 40 ft. square by 20 ft. high, with two storeys, lattices, plastered inside and outside and walled with planks and wooden tiles	4000
A storehouse to keep the irons, 30 ft. square by 8 ft. high, walled with layers of planks and wooden tiles	550
A stable	250
An oven	100
	36003. 6.8.

This preliminary outline does not include the house where the smiths and workers will be lodged, because the house already standing at St. Maurice will be used. The other buildings cannot remain in place, as they are standing on the ground needed for the buildings which are part of this project. The materials may be used. Its value is not entered in the present statement, as this will come under extraordinary expenses which were not foreseen when composing this preliminary outline, such as excavation of roads and other work.

Unsigned
(Olivier de Vézain?)

(1) The word translated here is Toise — fathom, which is 6 feet.
(2) The item included here is not entered, as the foundry will be set up only when there is a guaranteed market for the iron in the form of iron thongs and other various kinds of foundry products. (This note appears in the left margin of the manuscript.)

Translation *Appendix B*

"Annual operating expenses", A.P.C., Series C11A, Canada, the Saint Maurice Forges, vol. 110, tome 1, pp. 335-339.

The furnace could be worked all year round, producing 1600 thousandweights of cast iron, of which only 900,000 lbs. could be used in the two refineries, to produce 600,000 lbs. of pig iron. Thus, 700,000 lbs. of cast iron would remain. As the extent of the market is not yet known, the project should be reduced to eight months of

work, producing 1,000,000 lbs. of cast iron, 900,000 lbs. of which would be used in the refineries, leaving 100,000 lbs. over to be used in making cast iron objects for use here in the Colony.

For 1,000,000 lbs. of cast iron, the requirements are:

2000 barrels(1) of iron ore at £3 per barrel brought to the furnace, this	6000
20,000 barrels of coke to be brought to the furnace at 20s the barrel	20000
1000 barrels of limestone at 20s per barrel	1000
600 barrels of sandy soil at 20s	600
100 of candle grease at 10s	50
	£27650

Wages

A forge master	3000	
A clerk	700	
A founder	1500	
A junior founder	400	
Four labourers at £300 each	1200	£ 6800
		£34450

The 1,000,000 lbs of cast iron will come to the same amount at a rate of £34.9s per thousand. This expense is not entered here because it will be carried below as an expense of the refineries and the smelting operation.

Expenses of the refineries and boilerhouses		
900,000 lbs. of cast iron at 34.9s per thousand		31005
14400 barrels of coke at 20s per barrel		14400
		£45405

Wages

A hammersmith (2)	1200		
Three boilermen at £600 each	1800		
A boilerhouse helper	300		
A refiner	1200		55105
Seven refinery employees		9700	
at £600 each	4200		
A carpenter	500		
A blacksmith	500		
		£55105	

The pig iron will come to £91.16s10d per thousand.

Smelting expenses.			
1000 thousandweights of cast iron at £34.9s per thousand		3445	
Wages			
A moulder	1500	2700	6145
Two labourers at £600 each	1200		
		£6145	
			£61250
Foundry expenses (3)			
Wages			
A founder		1500	
Four workmen at £300 each		1200	
		2700	
Output of the above forges.			
Output of the refineries and boilerhouses.			
600,000 lbs. of pig iron of which the following to be consumed by the colony:			
200,000 lbs at £200 per thousand		40000	
400,000 lbs. will be sent to France at			96000
600,000 lbs. £140 per thousand		56000	
Output from smelting.			
100,000 lbs. in the form of pans, slabs, cauldrons and other cast iron objects which will be used in the Colony at £200 per thousand			20000
			£116000

Unsigned
(Olivier de Vézain?)

(1) The word translated here is Pipe — a variable measure of capacity, used especially in measuring liquids. Here: barrel

(2) These workmen will work in the metal workshop when necessary. (This passage appears in the left hand margin of the manuscript).

(3) This expense is not entered, as the foundry will be set up only when there is a certain market for foundry irons of various kinds. (Note appears in the left margin of the manuscript).

FOOTNOTES

[1]New France, during the early 18th century, covered a vast territory entending to the Gulf of Mexico. Most of this area, however, was very sparsely populated

so that New France, as used in this paper, is only that narrow band of land along the St. Lawrence River, now part of the Province of Québec.

[2]For the story of this operation, see Hartley, *passim.*

[3]See Historical Statistics, series Z1 — 19, and Seventh Census, pp. 134-8.

[4]See Hartley, chap. 4, and Eccles, chap. 5.

[5]Hartley, p. 22.

[6]This material has been collected and published by Nash, primarily in French. Although considerable reference has been made to his research, the interpretations and analysis of the material, in this paper, are of a different nature and are examined from the perspective of an accountant rather than an historian.

[7]The monetary units used are libri (£), solidi (s) and dinari (d). 12=1s, 20=1£ (Note the British usage of £.s.d. for pounds, shillings and pence.) It is difficult to convert this amount into current dollars; some indication of its value can be perceived from the wages shown in the operating budget, which range from £300—600 per annum.

[8]Wurtele, p. 81. The literal translation of this phrase is "big house of the ironworks" but the connotation is that of "mansion".

[9]To conserve space, the translation of this document is not included in this paper. It is available to anyone interested in the details.

[10]Nish, *Cugnet,* p. 62.

[11]See the classic work by Davis, *Corporations.*

[12]Gordon, p. 59.

[13]Davis, J. D., p. 5.

[14]Wurtele, p. 87.

[15]Miller, pp. 48-9.

[16]The two translations, from the Old French, were made by Ms. Sheila A. Cushing, following Nish in *L'Actualité Economique.*

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BARTER BOOKKEEPING: A TENACIOUS SYSTEM

Abstract: Since accounting develops to meet the needs of its environment, the same systems may not be used in all parts of the country at the same time. A system of barter and credit bookkeeping was common in the U. S. during the 1700's, but began to diminish from the civilized parts of the country during the early 1800's. However, the barter-credit system continued to be used in some rural areas well into the 20th century. These 20th century barter-credit records were not antiquated. The needs of management were little different than those of other storekeepers of a century and a half earlier. Thus, the same accounting methods were sufficient to meet these needs.

The methodology of accounting develops to meet the needs of the economic environment in which it operates. The business environment of the United States has not been identical in all places at a given point in time. Thus, an accounting system that was quite antiquated in one section of the country was still useful in another area. A system of barter and credit bookkeeping was very common throughout America during the 1700's but began to be replaced by a more modern system in the early part of the 1800's.

Barter bookkeeping used a partial system generally consisting of a day book where credit transactions were recorded on a memorandum basis. Later these entries were posted to a combined accounts receivable and accounts payable ledger. This ledger used elements of a double entry system by recording claims against customers as debits and receipt of payments as credits. Vendors' accounts also used the debits and credits correctly. The system was incomplete and not a true double entry system, however, because other assets and liabilities and owners' equity were not recorded and no attempt was made to accumulate revenues and expenses.

The double entry system was well known in the United States in the 1700's as is attested by the many textbooks in circulation on the Italian method of bookkeeping. In the early part of the 19th century, as business ventures became more complicated, the barter bookkeeping system gradually gave way to a more complete system of true double entry. One accounting historian made the following observation:

> After 1820, when currency in circulation became more plentiful, credit barter lost much of its usefulness. Although it did not disappear overnight, it gradually disappeared over a 30-year period ranging from approximately 1820 to 1850.[1]

Although credit barter and the accompanying primitive bookkeeping may have disappeared from the more civilized parts of the country during the mid-1800's, it continued to exist in the rural areas of the country for a very long period of time. The examination of a set of accounting records from a rural area of the United States will demonstrate the considerable period of time involved in the disappearance of the barter bookkeeping system.

A set of accounts receivable (and payable) subsidiary ledgers now located in the archives library at Appalachian State University are evidence of the survival of the barter bookkeeping system into the 20th century. The proprietor of the Mast General Store in Valle Crucis, North Carolina recently donated to the university a series of ledgers dating from 1906 to 1917. The ledgers record the transactions of a large, thriving retail store and were kept by someone who was fairly knowledgeable in the practice of bookkeeping.

During the early 1900's, Valle Crucis was isolated from the rest of the world by the Blue Ridge Mountains. There were no paved roads or railroads. The Mast General Store was the only commercial enterprise for miles. Thus, it was both the commercial and social center for the mountain folks. The local farmers not only bought everything they needed at the Mast Store, but they also sold their crops in the same store. With all of this buying and selling, it was important that an accurate record be kept of receivables and payables.

In 1907, the store clerk recorded all credit sales in a day book or memorandum. All payments on account were also recorded in the day book. At the end of the day the amounts and the names of the items purchased were transferred to the appropriate accounts receivable ledger accounts. The ledger accounts were in a format similar to those of today with the exception that the explanation column in the account was used to list the type of merchandise purchased.

The most interesting aspect of the ledger accounts was the nature of the credits to accounts receivable. Cash was rarely involved in the transactions that resulted in credits to customers' accounts. Typically, the assets received in payment of accounts were items that had been raised, produced, or collected by the customers.

Since the Mast Store bookkeeper used the explanation column to explain the nature of the payment received, it is possible to determine in exactly what form payments were made.

Included among the items that appeared on the credit side of the accounts receivable ledger accounts were furs, butter, wool, birch oil, cheese, apples, herbs, chickens, turkeys, tomatoes, potatoes, chestnuts, lard, eggs, hauling, work, and hay. The Mast Store sold these commodities to other customers in the area and to wholesalers in such cities as Johnson City, Tennessee (which was 50 miles away and a two day trip).

The ledger accounts also indicated a system of credit in which the store financed mountain farmers from crop to crop. After the fall harvest there would sometimes be accounts with credit balances but very few of the accounts were ever paid in full. Because the customers of the Mast Store lived in the area, the proprietor did not mind extending credit for long periods of time. Eventually, the crops would be harvested, and as there was no place to sell the crops other than at the Mast Store, there was little danger of an account not being paid.

A typical account is that of R. F. Billings, which appears in Figure 1. The account shown here is typical of the Mast Store receivables. Cash was apparently a rare commodity in the North Carolina mountains. As a result, it was necessary to conduct business transactions using for exchange those commodities that were available. The significance of the Mast Store ledgers lies not in the fact that they represented records of a barter system, but that they represented twentieth century records of a barter system. The needs of the management at the Mast Store were little different than those of other storekeepers of a century and a half earlier. Therefore, the same accounting methods were sufiicient to meet those needs.

FIGURE 1

THE ACCOUNT OF R. F. BILLINGS

1907		Dr.		1908		Cr.	
Nov.	9	Gingham	.80	Jan.	8	Birds	3.19
	30	Bolt Dress Goods	2.39	Mar.	13	Bal. in Birds	9.57
					30	Lard	5.00
1908						Hauling	1.25
Jan.	8	Soap	.05	Apr.	14	"	4.80
Feb.	14	Hardware	1.60	"	"	"	1.30
Mar.	10	P. Pt.	.25	"	20	Meat	6.10
	13	O Chill Plow	9.00			Pants Return	.55
	21	J.W. Dyer	1.40	May	21	Hauling	1.23
		Ribbon	.75		30	Potatoes	3.00
	30	Goods	2.79				
Apr.	14	Oil	.50				
	17	Mdse	8.80				
	21	Suit	3.50				
		Hat	1.00				
May	2	Lace	.35				
	16	Rocking Chair	2.25	Transferred to Page 440			
		Shoes	1.40				
	29	Crocks	.50				
	30	Hat	.15				
June	11	Can Rubbers	.25				
	15	Hat & Ribbon	.25				
			37.98				35.99

NOTE

[1]Kreiser, Larry, "Early American Accounting," *Journal of Accountancy* (July 1976), p. 80.

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GEORGE WASHINGTON AS AN ACCOUNTANT

Abstract: George Washington's interest in bookkeeping began in 1747 when at the age of 15 he started his first ledger and lasted until his death in 1799. His bookkeeping records span a period of fifty years. This manuscript reveals a unique side to President Washington's personality and recounts his inherent desire for accuracy and honesty in all dealings.

Anyone who has seen a copy of George Washington's signature becomes aware of the meticulous care with which he wrote. This precision and attention to particulars carried over into his books of account. Washington learned to write a good hand, and his manuscripts and account books have a legibility resembling an engraving on a steel plate. Of particular interest to those who are interested in George Washington as an accountant, are the beginnings of his educational background which caused him to develop the characteristics of an accountant.

His early education was received from his father, who besides his interest in agriculture, had a business interest in an iron foundry. Of interest to George, while under his father's tutelage, were his father's surveying instruments which probably led to his own interest in the use of numbers. At the age of 13, after the death of his father, he was sent to Reverend Mayre's school in Fredericksburg, Virginia where he needed to cross the Rappahannock River from his family's farm to the school building at St. George's Parish.

The copybooks which he wrote during this period of school attendance are preserved in the Library of Congress. The earliest of Washington's copybooks contain verbatim excerpts from *The Instructor, or Young Man's Best Companion* by George Fisher (London, c. 1730).[1] From this popular textbook, the young student wrote copiously and carefully the lettering for a Round Hand and an Italian Hand, the rules for measuring, for arithmetical computations, and rules for square and cube roots. It also gave models and forms of business papers, such as notes, bills, receipts, leases, and deeds. Introductory material on bookkeeping was also provided in *The Instructor* even though surviving copybooks do not contain his exer-

cises in record-keeping. This book left a lasting impression on Washington, so much indeed that later, in 1769, when he was overseeing the education of his young stepson, Master John Parke Custis, he ordered a copy of the latest edition for the young boy's use.

George Washington practiced the art of bookkeeping early. His first "little" ledger covered the period from September 1747 to the start of a new ledger in December 1749. As he was only 15 years old, his ledger accounts were with close relatives, with the friends of his youth, with George Fairfax, and with his half-brother, Augustine. It was ruled like a cashbook, and contained his cash accounts with debits on the left-hand page and the credits on the right-hand page. Both pages have the same number; the first two pages are numbered one, the next two are numbered two, and so forth. There are a series of pages containing cash entries, then a series of double-entry cash accounts with individuals. This early format of record-keeping was to remain with him throughout his subsequent ledgers, and thus, he recorded his business as a planter and miller.

His farm ledgers are models in accuracy and record-keeping. They contain cash records, and receivables and payables due to or from individuals; each account being carefully balanced. An index to the ledger accounts is included showing page numbers as the accounts with individuals are not in alphabetical order. There is no evidence of Journals nor Proprietary accounts. Periodically, he would prepare an inventory of his personal property and compute profits or losses on his farming operations. The farm ledger for Mount Vernon for the year 1798 credits the four outlying farms and related activities with a profit, but most of this was canceled by the expense of maintaining the Mansion House Farm. He practiced accounting with care and diligence. In 1760, he wrote in his diary, "Mrs. Washington's indisposition, confined me to the House and gave me an opportunity of Posting my Books and putting them in good order". During this time, he wrote to his London merchant, "I coud (sic) wish that it was a practice to render an Acct. Currt. of the dealings between us once a year that if any Errors shoud (sic) arise they may be rectified while the transactions are recent" which shows his close attention to accounting accuracy.

His personal ledgers began again in 1749 and ended at the time of his death in 1799. In 1758, as Colonel Washington and Paymaster of the Virginia Regiment, he kept the personnel records in his beautiful handwriting of the men serving under him at Fort Loundoun. In one of his ledgers is a carefully preserved account with his mother.

During his service as Commander General of the Revolutionary Forces, he kept his accounts with the United States, commencing June 1775 when he began to use his personal funds to further the revolutionary activities and ending June 1783, a span of eight years. He recorded all his expenditures listing each item as the expenses were made with receipts provided. In these books, he changed his page numbering system by numbering each page consecutively. (See illustrations of pp. 23 and 24 of his January 1777 ledger.)

Believing in the efficiency of good record-keeping, Washington wrote to his adopted grandson, George Washington Parke Custis, on January 11, 1797:

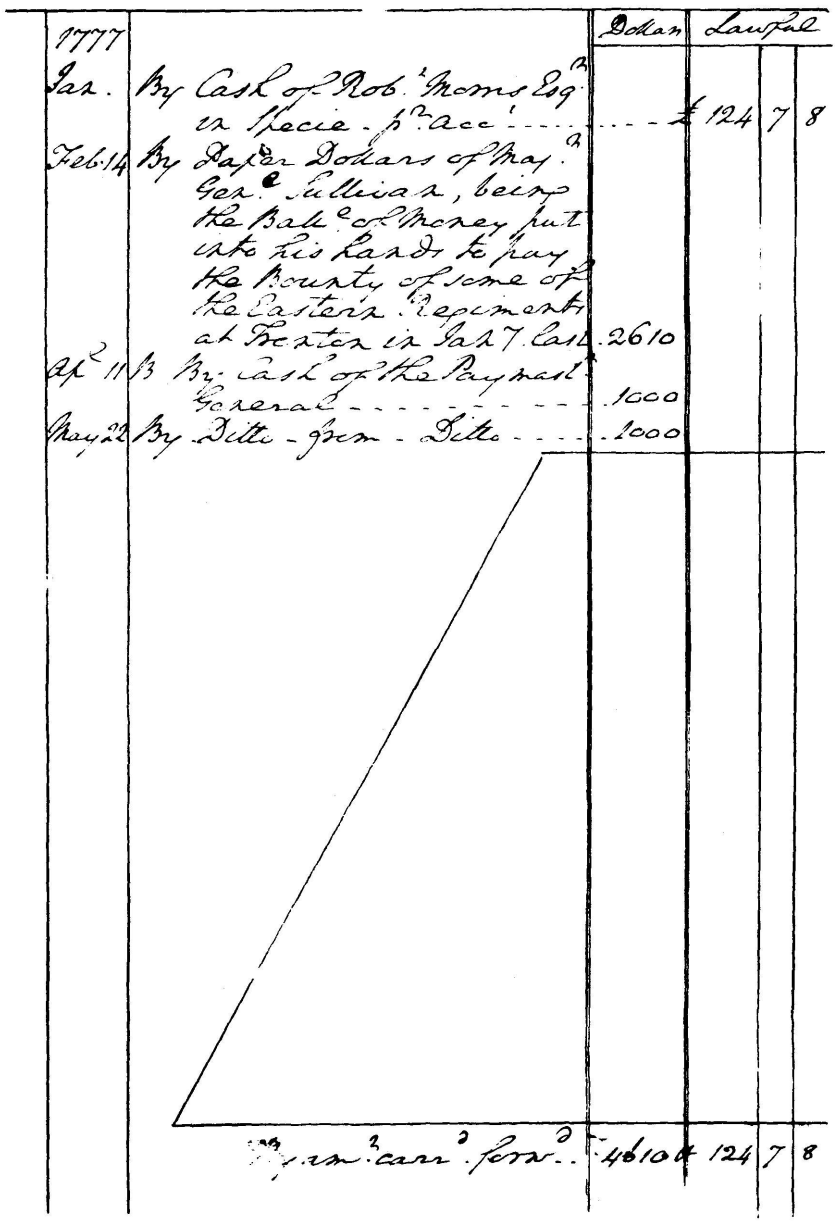
> "Another thing I would recommend to you — not that I want to know how you spend your money — and that is, to keep an account book, and enter therein every farthing of your receipts and expenditures, the doing of which will initiate you into a habit from which considerable advantage would result. Where no account of this sort is kept there can be no investigation, no correction of errors, no discovery, from recurrence thereto, where too much or too little has been appropriated to particular uses. From an early attention to those matters, important and lasting benefits may follow."

In 1799, having developed a wind-pipe infection after riding out to his mill two and one-half days earlier — a distance of three miles in the snow and sleet, he lay near death in his Mount Vernon bedroom. He mentioned to those around him that he was unafraid to die and that a few days earlier he had put his "account books in proper order". Who, but an inbred accountant, would have thought of such a matter before he passed away?

FOOTNOTE

[1]A copy of this textbook dated 1767 is in the author's library. Pages 208, 209, 215, 225-228, and 231 correspond with George Washington's School Copy Books, plates 32 through 37 in The Library of Congress.

1777	(11)	Dollars	Lawful		
Jan 1	To Bal. of the last Acc. for the years 1775 & 76		£ 599	19	11
	To Col. Jos. Reed by his Acc. rendered the Pay m. Gen.		37	10	—
	To Sundry Exp. paid by myself at different times & places in passing from the White plains by the way of Kings ferry to Fort Lee — and afterw. on the Retreat of the Army thro' the Jerseys into Pennsylvania & while there		126	4	3
	To Secret Services since the army left Cambridge in April — while it lay at New York — & during its retreat as above	1050	284	—	—
12	To Sundry Exp. paid on the March from Trenton to Morris Town & during two days halt at Pluckamin — pr. Mem. in Book —	98	35	10	—
Feb 7.	To Col. Reeder — lent him for the use of his Regim.	500			
Mar 8	To Capt. Gibbs for Hd. Exp.	130			
	Ditto — Do.	260			
	To Mrs. Thompson — the House keeper for like purposes	10			
Apl 11	To Capt. Gibbs .. Hd. Exp.	1000			
	To Servants at diff. times	46			
	To Benj. Jennings's acc. Pens. Curr. ... £5-12-11 ded. dif. of Exch. 1-2-7		4	10	4
19	To Jacob Mayr Gen. Greene for secret Services		3	—	—
May 22	To Capt. Gibbs — Hd. Expens.	1000			
	To amount car. forw.	4094	£1090	14	6



1777		Dollars	Lawfull		
Jan.	By Cash of Rob.t Morris Esq.r in Specie p.r Acc.t		£	124	7 8
Feb.y 14	By Paper Dollars of May.r Gen.l Sullivan, being the Ball.e of Money put into his Hands to pay the Bounty of some of the Eastern Regiments at Boston in Jan.y 7. Cast	2610			
Apr.l 11	By Cash of the Paymast.r General	1000			
May 22	By Ditto - from - Ditto	1000			
	Errors Excepted	4610	£	124	7 8

A SHARECROP AGREEMENT OF THE 1830s

March 8, 1835

An article of an agreement Between me &
Thomas McDougal for my place which he
has taken on Shares with me as follows
1 to Laying all my part of fence on Said lot
2 to Repairing the windows & By Sow
Douing (so doing) has the place to
the halves the garden excepted
the Corne potatos to Be devided in the Basket
the hay to Be put in the Barne and there Devided
the work to Be Done in Season and in a
workman Like maner and to git in
mud out of the medow Between me & Brown.
They are to kep the Bildings in as good repair
As we found them except the natural wear
Likewise he is to have wat wood he wants
to Burne of that Down or any My Standing
the (----?) feed he has one half & I the other half.
he to find one half Seed & I the other half.
the above agreement we Boath agree to
Winchester March 8 - 1835

Thomas McDougal

(signatures)

Abner Barden

Sharecropper agreement found in wastebook and customers' ledger dated January 1824 to November 1835. The ledger originally belonged to Abner Barden a hatter of Richmond, New Hampshire and is now in the Accounting Collection, Rare Book Room, University of Florida library.

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BAILY'S PARADOX

The following question appeared in Francis Baily's celebrated 1808 text on interest and annuities: "If a *penny* had been put out at 5 percent *compound* interest at the birth of Christ; to what sum would it amount at the end of the year 1810?" . Baily gave this solution :

> By the first theorem . . . it will be seen that its amount in that time would be .004166666 × $(1.05)^{1810}$ = 938469 000000 000000 000000 000000 000000 pounds. Now the diameter of the earth is about 8000 miles; consequently its solid contents* will be 68 188963 498145 531559 936000 cubic inches: and if it were made of standard gold, each cubic inch being worth 38 *l.* 10 *s.***, the total value of such a globe would be 2625 275094 678602 965057 536000 pounds. But the amount of a penny in 1810 years as above stated, is more than 357 474 600 times the value of such a globe: consequently if one penny had been put out at 5 percent compound interest at the time above mentioned, it would, at this period, have amounted to more money than could be expressed by THREE HUNDRED AND FIFTY-SEVEN MILLIONS of globes, each equal to the Earth in magnitude, and all solid gold!!! Whereas if it had been put out at the same rate of *simple* interest, the amount in the same time would have been only *seven shillings and seven-pence half-penny*.

Baily's calculation is "slightly" different than the 357,426,300 globes determined by my own calculation. Even allowing for a possible error, perhaps someone might want to consider planning for

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*To find the solid contents of a sphere, multiply the decimal .785398 163397 448309 615&c, by the cube of the diameter, and take two-thirds of the product.

**Since a cubic inch of distilled water weighs about 254 grains, and the specific gravities of standard gold and water are to each other as 18.888 to one, it follows that a cubic inch of gold, at the mint price of 3 *l.* 17 *s.* 10½ *d.* per ounce, will amount to 38 *l.* 10 *s.* 1½ *d.*

Utopia by putting a dollar in trust in 1979 for some needy cause in the year 4000!

REFERENCE

Baily, Francis. *The Doctrine of Interest and Annuities* London: John Richardson, 1808.

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BOOK REVIEWS

Stephen A. Zeff, (ed.), *Asset Appreciation, Business Income and Price-Level Accounting: 1918-1935,* (New York: Arno Press, Reprint Edition, 1976, pp. 208, $28.00).

Reviewed by Louis Goldberg, Professor Emeritus
Hawthorn, Victoria, Australia

When Henry W. Sweeney's book, *Stabilized Accounting* was reissued in 1964, that author included as a prefatory essay a paper entitled "Forty Years After: Or Stabilized Accounting Revisited." Among the many points that he made in that essay, was one to the effect that "the literature of even the 1920's was often superior to many of the pseudo-scientific 'vanity' outpourings since 1936." Sweeney's observation is borne out by the papers on accounting problems arising from changing price levels which are reprinted in this volume, all of them having appeared between 1918 and 1935.

The papers are reproduced by a photographic process from the original publications, complete with some few misprints, which are not serious in themselves, and the original page numbering, which results in the absence of consecutive numbering of pages throughout the volume. The need to reduce the size of the various journal pages to the format of an octavo book has resulted in different sizes of type, that of one article being so small as to be difficult for any but the sharpest eyes to cope with.

Of the eighteen papers included, nine are by Sweeney himself, two by W. A. Paton, two by Fritz Schmidt, and one by each of Livingston Middleditch Jr., H. C. Daines, Max J. Wasserman, Ralph Coughenour Jones and Solomon Fabricant.

For the most part, these early articles are written in readily understandable English, uncluttered by jargon or verbiage, and the arguments are clear, direct and forceful. In an introductory essay, the editor, Dr. Zeff, explains that when *Stabilized Accounting* was published in 1936 it represented only a portion of Sweeney's doctoral thesis, from which, because of publishing constraints, much of the

theoretical material had been relegated to footnote references to journal articles. The nine Sweeney papers in this volume now give us back most of this theoretical material. They are supplemented (or should it be complemented?) by the other articles from writers who so early recognized the accounting problems arising from what Sweeney aptly described as the rubber dollar. A considerable proportion of the writing relates to the European, and especially the German, experience of rampant inflation in the early 1920's.

The result is a valuable collection of articles in advocacy or adjustment designed to counteract the influences on accounting statements of variation in the "value" of the monetary unit. For this, the student of the history of accounting thought in the twentieth century will be most grateful.

However, two reflections might exercise his mind. The first is: If the arguments for adjustment were so cogently and so forcibly put forward as early as the 1920's, why is it that after fifty years, in which period the arguments have been reinforced and amplified and the number of proponents greatly increased, the accounting profession in most countries is still taking only tentative steps towards implementation of appropriate corrective measures? Have accountants, in fact, as much power to induce change as is implied in much of the discussion? Have businessmen, investors, creditors, taxation authorities, been made sufficiently aware of the arguments? Perhaps a process of education of the community is necessary as well as accounting conviction. Sweeney himself, in his "Forty Years After" essay of 1964, allocated the blame, in the U.S.A., to the accounting profession, business management and the federal government, with each of these indulging in something of a buck-passing exercise. Whether he was correct or not could well be the topic for an ambitious Ph.D. candidate in the field of accounting history.

The second reflection, which is not unrelated to the first, is: The early writers included in this volume were all clearly committed to advocating departure from historical cost. They were the protagonists of change. Were there no antagonists, and, if there were, who were they and what did they say in these early days of discussion? A companion volume of this most welcome collection might result from some researcher's digging into this part of the field.

Such potential stimulation, together with the historical content of these essays, constitutes ample justification for the initiative of the editor and the publisher in making this anthology now readily available.

The Chartered Accountant in Australia, Golden Jubilee Issue, (Sydney, N.S.W. Australia: The Institute of Chartered Accountants of Australia, June, 1978, pp. 136, Single Copy, $2.50).

Reviewed by Robert H. Raymond
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This special issue is devoted to the history of the first 50 years of The Institute of Chartered Accountants in Australia, but several of the commentaries review the antecedents of the Institute and the profession in Australia. Nearly half of the issue is devoted to a carefully researched history of the Institute by A. W. Graham, National Registrar. A more complete history by him is to be released later in the year and, judging by the scholarship evident in this article, should be awaited eagerly by accounting historians.

Preceding Graham's study is a series of messages, historical articles, and short commentaries reflecting a variety of perspectives from the points of view of leaders in the Institute. All except one of the living past presidents submitted comments. Among the subjects that are discussed in several of the articles and commentaries are:

—The Institute's royal charter — issued June 19, 1928 and the only charter granted to an accounting body outside Great Britain.
—Requirements for admission — since 1972 these requirements include a tertiary degree plus a professional year, conducted entirely by the Institute, that encompasses (1) a series of assignments on a number of specified topics, (2) compulsory attendance at sessions at which the assignments are discussed, (3) completion of a major essay, and (4) at year's end an open book examination.
—Attempts to find a generally acceptable method of accounting for the effects of changing prices.
—Attempts to form an Australasian, as contrasted with Australian only, professional accounting body.
—Attempt to achieve integration with the Australian Society of Accountants.
—Background, accomplishments and problems facing the Accountancy Research Foundation — which presently is responsible to a Joint Standing Committee comprised of the Executive Committees of the Institute and the Society.
—Influence of persons and events that culminated in Australia being one of the nine founding members of the International

Accounting Standards Committee and J. A. Hepworth becoming the present chairman of that body.
—Specific impact of mini and micro computers, as well as the broad impact of computers, expansion of management services and demands on the auditor.
—Where to go from here.

Four observations by authors of articles and comments in this jubilee issue serve to summarize its tone and perspective: The professional accountant, and that term includes the academic, must lead the evolutionary process but he should not dominate it (p. 24). Expectations of the public have tended to outrun the current techniques of the profession (p. 35). As late as 1957 the accountants' early training left undeveloped to a great extent the ability to "tune in" to the human atmosphere in which accounts and figures now have to be used (p. 71). Examination of the past makes clear the cause and effect links which have shaped the profession (p. 36).

Rex Winebury, *Thomson McLintock and Co. — The First Hundred Years,* (London: Seeley Service and Co., Ltd., 1977, pp. x, 1+ 164, private circulation).

Reviewed by J. C. Lehane
The New University of Ulster

The firm of Thomson McLintock and Co. holds an honoured place in the accounting profession and its stature is increasing over the years. This volume traces its history and growth since its foundation. In essence it is the story of two remarkable accountants, Mr. Thomson McLintock and his son Sir William McLintock. Linked with their story is the history of the development of accounting and more particularly that of auditing and investigation in the United Kingdom. The firm has its main emphasis on auditing and investigation. It has grown with its clients. The outstanding example being the growth of Grand Metropolitan Hotels (the British Hotels Group). The expansion overseas of this group convinced the sceptics in Thomson McLintock that the firm had to go international. This led to the creation of McLintock Main Lafienz and Co. in 1966. The original purpose of many accounting firms was to carry out an investigation into the causes of bankruptcies and the failures of business firms and to act as liquidators. The founder of the firm, Thomson McLintock, made his reputation as a result of his handling of the catastrophes arising

from the City of Glasgow Bank crash in 1878 — an event which had widespread repercussions in the administration of banking as well as in commerce generally. The firm developed in Scotland, concentrating its affairs there up to that momentous year 1914. Again it was an appointment as a liquidator which caused the firm to expand to London. Sir William McLintock — the eldest son of Thomson McLintock — had to come to London to wind up the affairs of the Northern Equitable Insurance Company which had been floated to take advantage of the widened scope for insurance created by the Workmen's Compensation Act of 1906. The opening up of the London office gave rise to friction and conflict with the Glasgow office. Eventually the two offices separated in March 1934 only to come together again in 1959. In the period following the first World War McLintock's were mainly concerned with performing the same role as merchant banks do today, advising on and arranging mergers. In this way the firm helped the creation of that industrial giant, Imperial Chemical Industries. While this period was an age of commercial growth and expansion, it was also a period where grave problems arose in Britain concerning the presentation and disclosure of information in published company reports. While there was an increase in the amount of information disclosed, that which was shown was not particularly informative. Sir William McLintock summed up the situation when he said in evidence to the 1925 Company Law Amendment Committee "there are companies whose annual balance sheets are models of obscurity." It is a pity that a more detailed reference has not been made to Sir William's evidence before this Committee, whose investigations paved the way to the 1929 Companies Act in the United Kingdom. The expertise of Sir William was called upon to clear up the affairs of the Kyslant Group after the famous Royal Mail Case. The onset of the 1939-1945 War only temporarily halted the advance of the firm. Expansion was the order of the day and this was accelerated after the re-union of the London and Glasgow offices. This expansion into other areas of the United Kingdom was based on a federal concept, giving local offices considerable autonomy while co-ordination is effected by cross-partnerships and by joint committees on standards and policies. The phrase and policy "small is beautiful" was first put into practice by the firm. Since its foundation there has been a very close link by the firm with the Institute of Chartered Accountants in Scotland. Indeed the firm helped to bring the Institute in the same breath. It was a happy chance that the joint senior partner in the Glasgow office (Mr. J. Kirkpatrick) was president of the Institute in the centenary year of

the firm. Sir William Slimmings, another senior partner, has sustained the firm's tradition of public service and the profession must deeply regret that his work on the integration of the profession proved abortive due to outside vested interests.

This is an interesting book showing the growth and development of accounting practice. It is a difficult subject on which to write as the author must aim to be objective and paint the subject "warts and all." Mr. Winebury deserves our congratulations on the way he has done his task. One regrets the absence of an index.

Bryce Lyon and A. E. Verhulst, *Medieval Finance: A Comparison of Financial Institutions in Northwestern Europe* (Providence, Rhode Island: Brown University Press, 1967, pp. 100, $5.00).

Reviewed by Ernest Enke
Alfred University

This book discusses and compares the internal financial controls of the governments of England, Flanders, Normandy, and France in the eleventh and twelfth centuries. With the rise in interest in governmental accounting in America over the past decade, *Medieval Finance* should be of interest to governmental accountants searching for the roots of their profession. Since there is relatively more recent work on the records of Medieval and Renaisance merchants and bankers than on the financial records of governments, this book helps to provide a balance.

Although the private sector contributed many significant innovations including double-entry bookkeeping, the public sector did not lack sophistication. In particular internal control with the key concept of separating record keeping and custody seems to have developed much faster in governmental financial operations. The earmarking of specific revenue sources for certain expenditures would seem to reflect the rise of fund accounting. The follow up process of comparing the records with the cash on hand and verifying that the earmarked revenues were appropriately spent rested on a council of upper level officials sometimes even including the ruler. After an annual audit by this council, the receipts and expenditures of the government were recorded.

The discovery of one of these records, the principal general account for the County of Flanders in 1187, the *Grote Brief,* provided the impetus for this book. The authors examine the *Grote Brief* and

compare the financial control mechanisms it reveals with what is known of English, Norman, and French practices. They conclude that the governmental financial controls in all of these countries developed similarly.

Although this book does fill a need for a history of governmental financial administration in Northwestern Europe during the Middle Ages, this is not apparent from the title. The title would lead me to expect a discussion of medieval banking institutions. A title such as *Financial Controls of Medieval Rulers* might more successfully attract the attention of the readers it is most likely to interest.

Since the discovery of the *Grote Brief* led to this book, the second chapter is a detailed discussion of Flemish governmental financial controls. Many readers will find that skipping the second chapter to go on to the broader discussion of the later chapters before returning to the second chapter will be helpful in providing a framework for the details.

Although this is a small book, it does help to fill in the development of one major and sometimes neglected branch of accounting. People interested in the history of governmental accounting and of financial control systems generally will find it useful.

Christiane Piérard, *Les Plus Anciens Comptes De La Ville De Mons* (1279-1356). *Tome 1.* (Bruxelles: Commission Royale d'Histoine, Académie Royale de Belgique, 1971, pp. xlvi, 785), *Tome 2.* (Bruxelles: Commission Royale d'Histoine, Académie Royale de Belgique, 1973, pp. planches i-v, 213 Indexes).

Reviewed by Frederic M. Stiner, Jr.
Iowa State University, Ames, Iowa

From the Thirteenth Century onwards, the city of Mons has had the good fortune to preserve an unbroken series of city records. The Royal Academy of Belgium has made a large contribution to scholarship by making available two volumes concerning these records, covering 1279 to 1356. This set of books transcribes the most important documents of Mons during that period.

Tome 1 has an extensive Introduction to the way the records have been transcribed and handled. This introduction is followed by three sections: *Comptes de la massarderie, Comptes annexes,* and *Comptes échevinaux.* The accounts of the public officials, massards *("le receveur communal"),* are 47 scrolls and the first account book.

These cover 1289 to 1338. *Comptes annexes* are eleven sets of records from approximately 1279 to 1334—but not all series in this collection cover this range. These records do cover a number of municipal items, including construction, borrowing, rents, tallies for assessments and other activities. *Comptes échevinaux* are three series of accounts from 1309-1348, both scrolls and books. The échevin in Belgium was a municipal magistrate assisting a mayor.

Tome 2 is an exhaustive set of three indexes for names, things and organizations, and money found in *Tome 1.* Some authorities consider French before 1350 to be Old French. Others feel the change to Middle French occurred later. In any event, the reader of the books should be aware that usage and spelling differ within the records as well as from modern spelling and usage. A glossary gives some guidance to the language spoken north of the Loire, which differs somewhat from the French language as most foreigners have learned French. This glossary is especially useful for interpretation of unusual and various spellings used in the records over the years.

General features increase the usefulness of the book. First, the lines of the text are numbered on each page. Second, the passages which are likely to be of interest to an historian are indicated by parentheses. Third, the typeface is large. Finally, the paper is heavy, hopefully to last as long as the original documents did.

These books should interest students of this time period, which is contemporaneous with the first Italian double-entry bookkeeping. A governmental specialist might find these books useful for understanding European municipal records before double-entry accounting made an impact.

Osamu Kojima, *Studies in the Historical Materials of Accounting,* (Tokyo: Daigakudo Shoten Ltd., 1978, pp. 246, y 7000, published in Japanese).

Reviewed by Kohhei Yamada
Meiji University
and
Kazushige Shima
Takushoku University

The author, Dr. Osamu Kojima, a Professor of Accounting at Kwansei Gakuin University in Japan, is an authority in Japan on the historical study of bookkeeping. In 1961 he published his work *Origin*

and Development of Double-Entry Bookkeeping, and after three years his famous work *The Historical Study of Bookkeeping* as a back-up for the above book. Furthermore, in 1971 he brought out another work, *The Historical Development of Double-Entry Bookkeeping in England.* According to Dr. Kojima, he had the following ideas for a new project soon after he published his last named work:

(1) Not stopping with the study of the historical development of double-entry bookkeeping in England on the basis of secondary materials, but examining basic raw materials that are needed for that study, and utilizing them as a reinforcement for *The Historical Development of Double-Entry Bookkeeping in England* in the same way as *The Historical Study of Bookkeeping* was a back-up for *Origin and Development of Double-Entry Bookkeeping.*

(2) Studying the social and economic background of the development of double-entry bookkeeping in Scotland in the last quarter of the seventeenth and the whole of the eighteenth centuries, because good works on bookkeeping that were written in English were published both in Scotland and in England (by Scottish authors) during that period.

In August 1973, Dr. Kojima visited London and Venice in order to research the above subjects of study. In July and August 1976, he visited Moscow, Florence and nine other cities. During these trips he examined necessary accounting textbooks and account books, and he also included visits to many places that had been the settings of various episodes in the historical development of accounting. *Studies in the Historical Materials of Accounting* was the result of this research.

In this book one hundred and fifty-nine pictures that the author took in the visited cities appear first, and a preface, the text and an appendix follow. These pictures include color photos of the English version of Ympyn's books (the front cover, the title page, the first page of "To the reader" and the second chapter), a Florentine Banker's account book, and the plaque of Luca Pacioli in San Sepolcro. The text consists of ten chapters, one for each of the cities visited: I. Moscow II. Florence III. San Sepolcro and Naples IV. Venice V. Milan VI. Antwerp VII. London VIII. Glasgow IX. Edinburgh X. Aberdeen. The main content of each chapter is as follows:

I. The examination of the state of the English version of Ympyn's book on accounting in the Lenin State Library in Moscow.
II. The examination of the state of a Florentine banker's account book dated in 1211.

III. The examination of the state of Pacioli's *Summa* in the City Library of San Sepolcro. Some explanation of the different editions of the *Summa,* first edition, 1494. The location of the famous picture of Luca Pacioli.
IV. The location of the bust of Professor Besta.
V. Some explanation of the book of the Borromed Company and the location of the company.
VI. The introduction about Christopher Plantin and his son-in-law, Moretus, and the explanation of their tombstones in Notre Dame in Antwerp.
VII. Some explanation about some early English accounting textbooks in London and the account books of some English merchants of the sixteenth century.
VIII. An explanation of Scottish accounting textbooks in the Glasgow University Library and the Mitchell Library in Glasgow.
IX. An explanation of Scottish accounting textbooks in the Institute of Chartered Accountants of Scotland, and the National Library of Scotland; the reason for Scottish authors of bookkeeping coming to the fore in the last quarter of the seventeenth and the whole of the eighteenth centuries. The examination of the state of Weddington's accounting textbook; the reason for the textbook being found at Blairs College in Aberdeen.
X. Dr. Kojima's questions about Weddington's accounting textbook addressed to the director of Blairs College Library and the answers to those questions.

The appendix consists of a paper "On Idea Rationaria by R. Colinson: The first Scottish accounting textbook" and a summary of Dr. Kojima's book that is written in English.

Though the period of the trip of the author's study was comparatively short, he examined a good many basic raw materials and the use of illustrations was very effective. On the face of it, the book appears to be a trip diary, but the contents offers a truly valuable historical study of bookkeeping which is highly recommended.

Lien-Sheng Lu, *A Study of Accounting History in China,* (Taiwan: Graduate School of Accounting, Soochow University, June, 1978, published in Chinese, pp. 266).

Reviewed by Rosita S. Chen
Shippensburg State College

This book, a published master thesis, was the result of a year-long research on the evolution of accounting in China, as a response to

the world-wide summon of Dr. Paul Garner for an international study of accounting history.

This book consists of 12 chapters grouped into three parts. The first part (chapters 1 & 2) introduces the objective of the study, the layout of the book and a brief summary of the materials covered in the chapters to follow. The second part (chapters 3-5) describes the history of accounting from 2183 B.C. to 1911, the year which marked the end of the Ching Dynasty and the birth of the Republic of China. Using three short chapters (about 16 pages) to cover historical development for a period of more than 4000 years, the author made no attempt to enter into detail other than providing a general background for a more extensive examination of the development of modern accounting. It should be noted that during this period, due to the stagnant nature of Chinese society, no significant change in accounting systems, mainly government accounting, had been observed even in the years of political turmoil and dynasty changes.

The third part deals with accounting development since 1911. In China, 1911 marked the beginning of the era of modernization and thus serves as a convenient dividing line between traditional and modern accounting. The evolution of accounting in general is presented in Chapter 6, while the development of each of the following branches of modern accounting is discussed in a separate chapter: government accounting (chapter 7), bank accounting (chapter 8), public enterprise accounting (chapter 9), and private enterprise accounting (chapter 10). Since, as a Chinese tradition, all the accounting activities have been subject to extensive regulatory supervision, laws and regulations appear to be the common thread of these chapters.

The last two chapters are devoted to the introduction of public accounting and accounting education, respectively. Public accounting is relatively young in China. However, it has been growing rapidly since the sixties under the influence of the United States. This influence is reflected in the by-laws of the Chinese Institute of Certified Public Accountants, the adopted Generally Accepted Accounting Principles and the recommended short form auditor's report, which is virtually a direct translation of the standard form recommended by the American Institute of Certified Public Accountants. The evolution of accounting education and the current status of college accounting programs are discussed in some length in the last chapter. Here again American influence is dominant.

In general, this book was appropriately organized and well written. It provides a bird's eye view of the historical development of account-

ing. Reference material is adequate though some second-hand information was used in the early chapters. This book is a valuable source for beginners interested in the history of Chinese accounting systems.

A word of caution, however, is in order. In 1949, the Nationalist government of the Republic of China retreated to Taiwan, while the Chinese Communist Party established the People's Republic in the mainland. In his discussion of the accounting development since 1949, the author has carefully limited his focus to Taiwan. For those interested in the evolving accounting systems in Communist China, this book will give very little help, if any.

Francis E. Hyde, *Cunard and the North Atlantic 1840-1973, A History of Shipping and Financial Management,* (Atlantic Highlands, N.J.: Humanities Press, 1975, pp. x, 382, $20.00).

Reviewed by Maureen H. Berry
University of Illinois

Professor Hyde is the emeritus Chaddock Professor of Economic History at the University of Liverpool, editor of *Business History,* and well known for his writings on maritime affairs. His latest contribution to this field is a business history of the Cunard company, drawn from materials in the Cunard Archives as well as private collections. The book contains 10 chapters and emphasizes the shipping and financial management of the firm. The first 5 chapters deal individually with significant concurrent activities from 1840 until the First World War. The writer then switches to a chronological approach to bring the reader from 1914 to 1973.

In deciding how to organize his topic, Hyde had examples of several other efforts to draw on and learn from. In his preface, page six, he notes that a privately published history of the Cunard Steam Ship Company appeared in 1886 but that no official history was attempted until the late 1930s when Captain Taprell Dorling, better known as 'Taffrail', produced a manuscript dealing only with ship specifications. Mr. Tom Hughes commenced a history covering the period 1839-1906 but did not complete his work. Mr. Charles Graves made the next attempt, describing the Company's activities during the Second World War in a book published but subsequently pulped in entirety. Finally, Mr. Henry Eaves, a Company Secretary, undertook a massive research effort and prepared a chronological study

of the the firm from 1840 to 1957, using a considerable amount of financial data. Unfortunately, this work fared no better than its predecessors as it was never published. Hyde describes it as "a mine of information on almost every aspect of the Company's affairs" but comments, without further clarification, that it "could not be published in the chronological form in which it had been written." Hyde himself found the Cunard story to be "highly complex and difficult of interpretation" and decided to use a sectionalized approach to show "the various threads of development in both policy and action which, when woven together, make up patterns on a wide historical canvas."

Separately examining concurrent events and subsequently blending them into a chronological stream is a tricky business because of the inevitable leap-frogging about in time, and the concomitant demands on the reader's memory and patience, which occurs until the threads are brought together. The process demands a considerable amount of expertise from the author. He has to select the relevent and salient activities, isolate those which can act as link-pins to connect the various pieces of his story, and employ a writing style and mode of presentation which will reduce complexity and enhance interest. It goes without saying that there must be an underlying technical competence with respect to the subject matter. Professor Hyde comes through with only partial credit since he swims well in the familiar waters of economic history but flounders badly when he strays outside into areas of accounting and finance.

Hyde starts out successfully by setting the scene and introducing the main actors and events in the first chapter dealing with the foundation, capital structure, and control during the period 1840-1880. There is good follow-up in Chapter 2: "Men, Ships and Mails 1840-1880" Hyde identifies the essentially conservative nature of Cunard's management policy, which adopted innovative approaches only after other firms had designed and tested them, and evaluates the effects of this policy on the firm's growth. It is not until the third chapter: "Cunard and the Emigrant Trade 1860-1900", when the author commences his commentaries on the financial management of the firm, that the reader starts to have difficulties. Unfortunately, the problem extends beyond matters of style as a quotation illustrates: (p. 183)

> "So far we have dealt only with the operational costs. It now becomes necessary for us to set the working capacity of the fleet against the wider financial background of the

> Cunard organization as a whole. This involves the debiting of many other items in the balance sheet, such as depreciation, overheads, preference dividends, capital and other charges. Unfortunately many of these items are not given separately in the accounts and we have therefore had to extract such information from the voyage books. In aggregate, however, all such charges are included in the total annual expenditure as shown in Table 6.1."

As accountants would appreciate, charges appear on earnings statements, not balance sheets and certain costs, such as depreciation and use of capital, are not "expenditures" in the sense of cash disbursements. Hyde's confusion raises serious questions about the reliability of the financial calculations which are scattered throughout the book.

Fortunately, the Cunard archives are on loan in the library of the University of Liverpool so that the source materials for the financial studies can be consulted by those who are seriously interested in them. Other readers are advised to skip them, or treat them with caution, and enjoy Hyde's work on the topics he knows best: ships and the men who sailed them.

Alfred Robert Roberts, *Robert H. Montgomery: A Pioneer Leader of American Accounting,* (Atlanta: Georgia State University, 1975, pp. vi, 358, $10.00 U.S. and Canada, $12.00 elsewhere).

Reviewed by Dale A. Buckmaster
University of Delaware

The stated objective of this book is to present a picture of Robert H. Montgomery, the man. The author states, "If in this study I have been able to capture the 'essence' of his personality in any small part, my purpose will have been fulfilled."

This reviewer takes the position that the role of biography in the study of history is to illuminate or contribute to the understanding of history. There is no justification. The personal lives of individuals are rarely interesting enough to justify a book. It is within this context that this review is written.

The book begins with a short introductory chapter that deals with two subjects. First, there is a defense of the study of accounting history. Then, the purpose of the book is identified. Chapters II and III identify Montgomery's origins, early personal and professional

life, and involvement in accounting education. Chapters IV through VII, the heart of the book, examine Montgomery's impact on accounting and accounting practice through public service, writing, and professional society association. The last chapter describes his strong interest in trees during the final part of his life. The text of the book is followed by three appendices and a very impressive bibliography.

Fortunately, the author's contribution goes beyond his stated objective of describing the Montgomery life and personality. Roberts provides the reader with a description of part of the environment of the accounting profession in the United States during the late nineteenth and early twentieth centuries. Furthermore, the description seems impressively researched and documented and, for the most part, easy to read.

Most of the shortcomings of the book are contained in the first three chapters. The biographical material in Chapters II and III distracts from the real value of the book. Also, the section of the Introduction defending the study of accounting history is unnecessary, and annoying. The study of accounting history has achieved stature and this section seems presumptuous.

Undergraduate and new graduate students can probably utilize their time more efficiently by seeking other general materials examining the early development of the accounting profession in the United States. On the other hand, tyros in this area will find this an excellent book. It will contribute to an overall understanding of the period and the bibliography suggests a number of reference sources. Veteran researchers of the history of accounting may not want to read the whole book. Yet reference to specific sections (as identified by the Table of Contents) might be very useful in the early stages of a project.

Maureen H. Berry, Editor
UNIVERSITY OF ILLINOIS

DOCTORAL RESEARCH

Three themes run through this selection of recent dissertations in accounting and economic history: flows of investment capital, the effects of income tax regulations on the financing of selected areas of the economy, and the effects of public policy on the accounting profession and accounting practice. The first and second themes are linked through their focus on investment decisions, while the impact of public policy on the private sector relates the second to the third. Consequently, it is the pervasive effect of public policy on accounting-related issues which underlies all these research studies.

Flows of investment capital were the concern of Neal, Pierson Doti, and Updike. Neal looked into bond refunding, comparing the practices of public utilities and industrial firms. Pierson Doti's field was the supply of financial capital by the state banks in California, while Updike examined the functioning of yet another capital market: the non-reserve city national banks. The supply of capital funds to the agricultural sector was the main topic in Updike's thesis and farming was also central to Holland's study — in particular, the effects of Federal taxation on a section of the Georgia egg industry. Strefeler, too, was concerned about public policy as administered through taxation: specifically, the effect the 1969 Tax Reform Act has had on donations of ordinary income property. Regulatory bodies are, of course, another mechanism through which public policy shapes private decisions. Roberts' study of the development of audit criteria by the public accounting profession details the strong influence on the auditing process of the courts and the Securities and Exchange Commission. The final study, by Moseley, reminds us how far public policy went to meet perceived needs for stronger accounting criteria, in this case control over public contract costing, when Congress established the Cost Accounting Standards Board.

The Evolution of Accounting Thought and Practices Related to Bond Refunding (Michigan State University, 1971, 231 pp.; 32/12,

p. 6602-A)[1] by George Howard Neal. Neal's was an ambitious project with the following main objectives:

1. To review developments in accounting thought related to bond refunding.
2. To compare practices and analyze size relationship between refunding-related costs, earnings, and dividends of public utility and non-regulated industrial firms.
3. To determine inferable support for alternative accounting procedures from recent models of accounting theory.
4. To investigate the question of whether different procedures may be justified for public utilities than for nonregulated firms.

Historically, the accounting literature has been divided between those who advocate the immediate write-off of bond refunding costs as refunding losses and the proponents of various write-off deferral methods on the grounds that such costs are applicable to periods which benefit from interest savings. Through questionnaires and the use of annual reports, Neal examined the bond refunding accounting practices of a sample of public utilities and industrial firms for the periods 1936-1945 and 1956-1965. During the first period, public utilities made use of deferred write-off methods more than immediate write-offs, but there was an increase in the use of immediate write-offs in the second period. A majority of the industrial firms, on the other hand, used the immediate write-off approach in both periods. Neal found, that for the first period at least, the public utilities which deferred write-offs tended to have larger amounts of bond refunding expenses in relation to retained earnings and net income than for industrial firms or those public utilities using the immediate write-off approach. Further examination, involving correlations between bond refunding costs and dividends, led Neal to infer a relationship between the relative size of these costs and the use of gradual write-off procedures used by public utilities in the first period.

In addition, Neal described, illustrated, and analyzed the Henriksen model which calls for the use of current values for bonds outstanding as well as bond interest at market rates. His study showed that the American Accounting Association's current cost model yields results which agree with Henriksen's approach. Neal's recommendations include the following: that data reported externally by public utilities should conform to data used for rate setting purposes; that further consideration should be given to the use of

[1] *Dissertation Abstracts International* volume and page references.

current costs for rate setting and financial reporting; and that further research should be performed concerning users' opinions as to the predictive assistance provided by data which is based on alternative approaches to accounting for debt.

Banking in California: Some Evidence on Structure, 1878-1905 (University of California, Riverside, 1978, 197 pp.; 39/2, p. 1018-A) by Lynne Margaret Pierson Doti. Pierson Doti's thesis was that insufficient attention has been paid to the contribution of state banks to nineteenth century financial history in the United States, even though they outnumbered the national banks which have received most research attention. The main reason for this neglect has been the difficulty of obtaining data about state banks whereas Comptroller of the Currency reports are available for the national banks. Information is available, however, from the California Board of Bank Commissioners and Pierson Doti used their reports to compile data on the financial industry in California for the period 1878-1905. Because California placed little legal restriction on banking at that time, Pierson Doti assumed that a competitive environment prevailed and she performed various tests concerning the effects on capital mobility of such factors as information and transportation costs. The limited data available showed similarity of interest rates. However, since information about interest charged on loans was available only for the year 1879, she examined interest charged to depositors. Comparisons were made between banks both on a regional basis as well as contrasting banks in rural and urban areas. None of these studies showed any consistent significant differences. Another approach taken was to study capital flows with respect to real estate loans. Almost all of the financial institutions in all counties engages in real estate lending and there was heavy dependence on lenders located geographically distant from the property. Another matter of interest was the extent of interbank deposits and amounts of paid-up capital. There was no difference in the tendency to acquire interbank deposits between rural and urban banks and the state banks had sufficient capital to become national banks.

Pierson Doti concluded that there was a competitive capital market in California during that period and, while certain counties in Southern California may have been isolated, capital appeared to flow within the state. This study has interest for those looking for causal relationships between economic change and structural and behavioral characteristics of the financial industry.

The National Banks and American Economic Development, 1870-1900 (State University of New York at Stony Brook, 1977, 187 pp.; 38/9, p. 5629-A) by Helen Hill Updike. Keeping in the same period, but turning to the national level, the focus is on the agricultural sector which was both the largest in the American economy and the most important component of the nation's export base. To evaluate how well this sector's capital needs were met and, thus, how the growth of the U.S. economy was affected, Updike studied the functioning of one of agriculture's most significant and available capital markets — the non-reserve city national banks — for the period 1870-1900. Those who felt that the working capital of the agricultural community were not being met at that time point to the fact that rural bankers had monopoly power and higher earnings because of usury laws and the way in which the national banking system operated. They also claimed that the rural bankers preferred speculation and enterprise loans in the cities.

To test the validity of these assertions, Updike ran regressions which showed no "measurable association" between bankers' earnings and usury laws or bank balances. It was also determined that city banks were not interested in making loans to country banks, presumably because of the higher probability of rural bankruptcies. An analysis of the types of assets owned by country banks showed a considerable variety in lending patterns. Generally, the smaller country national bank systems tended to hold more securities and to engage in sizeable lending to state banks, while the larger such systems owed fewer securities, made chattel mortgages to farmers, as well as crop liens, and also made loans to out of state city national banks which were not in the central reserve system. Thus, the agricultural sector received funds from the national banks through the loans made by the larger rural national banks and indirectly as a result of loans made by the smaller rural national banks to the state banks. As agriculture declined in profitability, the country national banks decreased their lending to state banks and increased their investments in the securities of urban sector entities. These changes in portfolio composition show that the national bank system functioned to make loans available and Updike concludes that "criticism of country banks' response to the capital needs of agriculture may more appropriately focus on the terms of those exchanges."

An Investigation of Federal Farm Income Taxation: Its Development with Attention to Congressional Intent and its Effects on the

Georgia Egg Industry (University of Georgia, 1978, 225pp.; 39/3, p.1675-A) by Michael Lynn Holland. This study encompassed both a review of the historical development of Federal taxation laws and regulations with respect to farming as well as a focus on their effects on a section of the egg industry in Georgia.

The first significant event in farm taxation and regulation history occurred in 1915, when the Treasury decided to permit farms to use cash-based accounting. At that time, possible tax avoidance benefits were minimal because of low tax rates and the absence of specific capital gains treatment. By World War II, however, the situation changed. Because of the increased tax rates, the potential for deferring taxes offered by cash-based accounting, as well as the 1942 enactment of Section 1231 whose provisions were extended to depreciable livestock by the Albright and Bennett cases. This loophole of cash-based accounting provisions has persisted, despite the Internal Revenue Service's efforts to remedy the problem, because of Congressional support of the farm lobby's approach that such provisions provide tax incentives.

Holland identified three specific practices in the Georgia egg industry: "internal production volume increases attributed to cash method accounting, deferral of tax liabilities through deduction of prepaid feed, and production increases caused by nonfarmer investors seeking a tax sheltered investment." Certain egg industry firms in Georgia, one set using cash-based accounting versus a second set using the accrual basis, were studied to determine whether there were statistically significant differences between them in firm behavior and organization with respect to the three selected areas. To control for differences in size, each set of firms was stratified into small—Range I—groups and larger—Range II—groups.

With respect to increases in internal production volume, no significant differences were found between the two sets of firms either between sets or between stratified groups. However, significant increases in production level were found between the two stratified groups within the cash-based accounting set, in comparison with their counterparts in the other set, "in periods of high egg prices and in the tax year immediately following these periods." Hence it was concluded that this over-production was primarily due to cash accounting. A significant difference between the two sets also established that the cash accounting firms used prepaid feed deductions to defer income taxes. Only with respect to the tax shelter aspect were no significant differences evident. Holland chose

form of business organization as an indicator of the incidence of outside investors but did not find that this factor contributed significantly to excess egg production.

The Impact of the Tax Reform Act of 1969 Upon Charitable Contributions of Ordinary Income Property (The University of Arizona, 1977, 205pp.; 38/11, p.6790-A) by John Martin Strefeler. Strefeler's dissertation examined the effect of the Tax Reform Act of 1969 on the donation of ordinary income property. Prior to the 1969 Act, a donor could take a deduction for the fair market value of such property, whereas the deduction was, by the 1969 Act, restricted to the donor's adjusted basis. Strefeler was interested in how this change affected ordinary income property donations as well as in determining what was the Congressional intent of the change and how such intent could be met by other alternative tax approaches. Historical analysis showed that the Congressional intent had been to provide an incentive for such donations, under the basic assumptions that philanthropic organizations should be supported and that this could best be done through the tax system. The potential for abuse of such intent was removed by the 1969 Act through its provisions which abolished: preferential treatment of property and service donations; vertical inequities; and possible profit to the donor through taking a tax deduction based on fair market value while avoiding tax on unrecognized income.

To evaluate whether the results of the 1969 Act were consistent with intended public policy, empirical evidence was gathered through two mail surveys. One was sent to artists, art museums, government archives, and university libraries, while the other was directed to university foundations. Inquiries were also made of selected politicians. Analysis showed that the Act had resulted in a decrease in donations of works of art by the creating artist, as well as contributions by literary figures, because of income tax considerations. The Act appeared to have had little impact, however, on donations of political papers where personal prestige appeared to play a more influential role than tax considerations.

Strefeler suggests that a tax credit, based upon fair market value, would be the appropriate way to restore the incentive to donate artistic creations, thereby reaffirming the Congressional intent which the 1969 Act evidently thwarted.

Evolution of Financial Audit Criteria with Emphasis on Selected Legal and Regulatory Influences 1917-1972 (The University of Santa

Clara, 1978, 39/2, p. 949-A) by Ray Roberts. Roberts examined the development by the public accounting profession of criteria governing the auditing process and the attest function during the period 1917-72. This review primarily consisted of a library search which was not confined to materials on the audit function but also included the legal literature, covered the 1933 and 1934 Federal Securities Acts, and data concerning the Securities and Exchange Commission and pertinent court decisions. The thesis includes a tabular presentation, in chronological sequence, of the criteria which originated in the period under review, together with the related circumstances.

The author concluded that the impetus for major improvements in audit criteria came, for the most part, from outside the profession has focused in parochial fashion on its own needs, and those of its clients, rather than on a wider public interest. To broaden this focus, while retaining the attest function within the private sector, Roberts suggests a number of remedial measures. These include: mandatory peer reviews of practice; a zero-base budget type of examination of the audit process and its underlying assumptions; and a certification process, Institute-directed, for those CPAs specializing in auditing.

An Historical Analysis of the Events Leading to the Establishment of the Cost Accounting Standards Board (Oklahoma State University, 1976, 324pp.; 38/9, p.5551-A) by Owen Bernard Moseley. This study used a combination of analytical methods, including genetic, Hempelian, and Collingwood methodology and Hester's historical storytelling method, to analyze the events leading up to the establishment of the Cost Accounting Standards Board (CASB) in 1970. Concentrating mainly on the *Congressional Record,* as well as public hearings, congressional reports, and the General Accounting Office's (GAO) feasibility study, Moseley traced events from the late 1950s to determine the various factors: economic, social, and political which affected Congress's decision. This analysis showed that Admiral Rickover, with the support of Representative Patman, played a key role as far as influencing Congress was concerned, plus the fact that those who argued against cost accounting standards were perceived as having a vested interest. As Moseley points out: "The mood of Congress was such that it was a question of proving that cost accounting standards were feasible and needed but a question of proving that they were not feasible and were not needed." Congress, then, placed more confidence in the proponents

of the proposal than in its opponents. Moseley's objective in carrying out this project was to shed light on some of the contributing factors to legislation affecting accounting practice in the hope that increased understanding of the surrounding circumstances might provide help and guidance to those involved in any future decisions of this nature.

Announcement

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Third International Congress of Accounting Historians

The Academy of Accounting Historians

The Accounting History Society

LONDON 1980

London, 1980 is to be the venue of the Third International Congress of Accounting Historians. The dates will be 16 to 18 August, and the location will be the London Business School, at Sussex Place, Regent's Park, London NW1 4SA.

The First International Congress of Accounting Historians was held in Brussels in 1970, and the Second Congress in Atlanta, Georgia, in 1976. At both there was a wide spread of nationalities among speakers and participants.

As 1980 will also be the centenary year of The Institute of Chartered Accountants in England and Wales, London is particularly appropriate for the Third Congress.

A call for papers to be presented at the Third Congress has been circulated. Anyone who would like to offer a paper is invited to contact Professor R. H. Parker, B.Sc.(Econ.), F.C.A., Department of Economics, University of Exeter, Amory Building, Rennes Drive, Exeter EX4 4RJ.

The organisers of the Third Congress will be the Accounting History Society (England), whose Congress Working Party has already met several times. The Academy of Accounting Historians (U.S.A.) will assist. The Convener of the Working Party is Mr. John Freear, M.A., F.C.A., Faculty of Social Sciences, Rutherford College, The University, Canterbury, Kent CT2 7NX.

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Professor Edward N. Coffman, of Virginia Commonwealth University, Richmond, is Editor of The Academy's working paper series.

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