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REVIEWS

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REVIEWS OF BOOKS AND OTHER PUBLICATIONS

Diran Bodenhorn, *Economic Accounting* (New York: Garland Publishing, Inc., 1988, 325 pp., \$40.00)

by Catharine M. Lemieux
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The FASB series, "Financial Accounting Concepts," states that the objective of accounting should be to provide information for business decisions rather than to describe economic events. In contrast Bodenhorn states, "that the primary concern of the accountant should be to measure the variables which economists have identified as the most important in describing the performance of an economy, and the entities in the economy" [p. 1]. In this book Bodenhorn develops a model of a simple economy based on economic theory and constructs an accounting model appropriate for this economy.

The economy in this model consists of a firm and a person who is both a laborer and a consumer. The individual, labeled Crusoe, maximizes a known welfare function subject to a wealth constraint and the firm maximizes profit subject to a known production function. Three groups, firm, household, and society, comprise the economy. Although this is a simplified view of the real world, Bodenhorn states that, "if an accounting principle gives a poor description of a simple Crusoe model, I find it very difficult to believe that it will provide a reasonable description of a more complicated model" [p. 4].

The author draws four conclusions from this economic model: (1) the sum of the value of individual assets of the firm is equivalent to measuring the value of the firm, (2) the appropriate price index to use for deflating values is a general price index, (3) the current value of real capital corrected for changes in the price index is the appropriate measure of capital maintenance, and (4) the only way to measure income is to measure wealth.

The accounting model consists of a balance sheet that measures wealth and an income statement that measures financial and productive income. The sum of financial income is zero for the economy so national income equals national product or productive income. Because welfare and production functions are known there is no risk in Crusoe's world. Flow accounts are closed to balance sheet accounts but in this system, debit entries do not increase asset accounts and reduce liability accounts. Debits are defined as anything that increases inventories and are positively signed. Credits decrease inventories and are negatively signed. Liabilities are viewed as negatively signed assets. This enables the same accounting procedure to be used for all accounts.

Allocations, such as depreciation, do not affect income or balance sheet variables because what is closed to the balance sheet accounts is the value added by production. Allocations merely explain the sources of the productive income. Firms do not generate income but do generate product for the society. Production income is transferred to shareholders. In this model wealth is defined as the market value of economic instruments and income is defined as the increase in wealth plus consumption. GAAP procedures measure value added directly and plug inventory while this procedure calls for measuring balance sheet values at market and plugging value added. FASB has supported GAAP procedures and Bodenhorn claims that this, "may well inhibit the evolution of accounting into an empirical discipline for the rest of this century" [p. 27].

The final section of this book attempts to extrapolate the conclusions from the first two sections to the real world. The first assumption that is relaxed is the existence of a government. This creates two problems: (1) the future tax liabilities which must be recorded on the firm's balance sheets no longer balance, and (2) the value of economic instruments is no longer explicitly defined. To solve this problem the productive value of economic instruments could be used for balance sheet purposes with the resulting complication being that inappropriateness of these values for private decision making.

The second assumption that is relaxed is the addition of banks and financial institutions to the economy. These firms differ from the production oriented firm in the economy because their assets are primarily financial and they do not charge fees for services but instead reduce the interest rate on borrowed money. This causes this type of firm to appear to have a negative income because their purchases of productive resources exceed

their sales. To correct this problem productive income is adjusted so that it equals a risk-adjusted normal rate of return on productive assets.

The final chapter extends these results to business accounting. Although the model suggests that the ideal accounting scheme would be based on current market prices, Bodenhorn allows that it would be possible for Crusoe to use historical cost, service-potential or market price as a basis for valuation. However, there are disadvantages to using either historical cost or service-potential valuation methods. The problems with service potential valuation is that the future is difficult to predict and there is no theoretically correct way to allocate future cash flows to various productive instruments.

Historical cost valuation will give the correct measurement for total assets, but it is difficult to allocate purchases of inputs and interest costs to the sale of particular productive instruments. One possible solution is to define projects in an attempt to associate purchases and sales with individual projects rather than individual assets. An additional problem with cost valuation in the real world is the existence of profit, an impossibility in the economic model. One possibility of recognizing profit is to compare actual costs and recoveries to "standard" costs and recoveries obtained from projections based on previous information. Variances would be an indication of the need to revalue assets at market prices.

Bodenhorn constructs a simple example using his Crusoe economy and compares traditional business accounting procedures to the results obtained using his accounting model. Problems with the allocation of depreciation, labor, and interest expenses cause differences in balance sheet values under the two systems. Bodenhorn's example supports the view that GAAP systematically underestimates interest costs of productive assets due mainly to the use of historical cost valuation of assets. Income would also be distorted due to these allocation differences. This leads Bodenhorn to conclude that, "GAAP are fatally flawed" [p. 280].

The ideas presented in this book call into question much of existing accounting standards and practices. The controversy begins with differences in the basic objective of accounting. Bodenhorn's contention that accounting should measure variables important for describing the performance of an economy is very different than the objectives of the accounting profession as stated by FASB. The desire to construct an accounting system where aggregation of individual and firm income statements

and balance sheets would be consistent with aggregate measures in the national accounts, lead the author to start with a basic economic model of a simple economy and derive an accounting system that would fit this model. If William D. Hall, former Arthur Andersen partner, is right and the accounting profession does have an "urgent need" for a usable conceptual framework, then this book is a step in that direction. The conclusions of this exercise have important implications for the future direction of the accounting profession.

Brown, Donald E., *Hierarchy, History, and Human Nature: The Social Origins of Historical Consciousness* (Tucson, Arizona: The University of Arizona Press, 1988, 400 pp., \$35.00)

by Jenice P. Stewart
The University of Missouri-Columbia

Anthropologist Donald E. Brown does an exceptional job of convincing the reader that the quality of historiography is affected by the patterns of social stratification within literate societies. Social stratification implies more than one social class within a society and refers to an individual's "social placement fate" within a society. Social stratification may be dependent upon genealogy (cast system) or individual capability (open system). In a cast society, a person is inhibited from uttering the truth about the upper echelon, therefore the account or historical writing is usually tainted ideology (ahistory) to the upper strata. In an open society, the historian has the freedom of speech to write objectively on his findings. Thus, open stratified literate societies have potential for a more sound historiography than closed or cast literate societies. Brown studies three time periods, Ancient, Medieval, and Renaissance, and four geographic areas, Asis, Near East, Greece, and Rome.

Donald E. Brown's story is convincing because he applies the "scientific" research method to develop and test his hypothesis. The "scientific" method includes defining a "problem" and resultant hypothesis, systematic tests of hypothesis, and controlling for external and internal validity [Kerlinger, 1973; Abdel-khalik and Ajinkya, 1979]. The "problem" defined by Brown is why are some literate societies full of "quality" (objective) historical recordings while others are not? For example, late dynastic Egyptians were a literate society with little recorded history. The tools were available for Egyptians to record sound history and additionally their literate neighbors,

Mesopotamian and Hebrews, maintained crude historical records. Yet the Egyptians were not recording their history, that is, they had given little or not merit to historiography. Florentines of the early Renaissance were also literate, but they provided quality and abundant historical writings.

Brown proceeds to investigate scientifically why some literate societies appreciated and wrote objective history and others did not. His initial society of investigation was the Brunei's, located in northwest Borneo, Malay. Brown finds Brunei history minimal, with stereotyped renderings of individuals. Upon investigation of a common event, the British gave a more concrete rendering of the individual than the Brunei. Brown then rationalizes that the Brunei are avoiding candid comments about the higher echelon of society because objective writings were not tolerated in Malay society. In essence, the Brunei, of a cast society, were thought-controlled and therefore limited in their renderings of the upper strata. In contrast, the British, of an open society, were free to give their objective rendition of any strata of society. After making these observations about the Brunei and British, Brown develops and empirically tests the following hypotheses:

H₀: There is no difference in the quality of historical writing between literate open stratified and cast stratified societies.

H_a: No hereditarily stratified society would have developed sound historiography [p. 5].

Abdel-khalik and Ajinkya (1979) state that defining a research problem includes delineation of the scope of the study. Brown, in defining the problem and resultant hypotheses, discusses the scope of his research. Brown investigates literate societies only, although he has no reason to speculate that his hypothesis does not apply to oral history, too. However, applying Brown's hypotheses to oral history represents another study.

Brown, a native Westerner, is the sole researcher of this study. Interpretations of his findings are from a Westerner's viewpoint, therefore his interpretations may not be sound but based upon observations that resemble those of Westerners. Brown minimizes this limitation by using objectively developed judgment (e.g., for seven months Brown researched London and Brunei public records and spent fifteen months in Brunei gathering oral and written history). In many instances, Brown finds that his interpretations are similar to those of non-

Westerners (e.g., Muslim scholars) which further reduces the bias.

Brown proceeds to test his hypotheses by establishing characteristics of open and cast societies, systematically applying these criteria to other societies, and comparing their respective quality of historical recordings. A closed or cast society is where rank is determined by genealogy. The upper echelon usually represents the royalty which can only be acquired through physical birth into the royal family. In an open society, rank is acquired through achievement or merit. In characterizing a social strata system, emphasis is placed on the ideology (controlled thought imposed by the higher echelon) reflected in the historian's writings, laws, and practices over long periods of time. Brown thus develops objective criteria, with the assistance of scholar M. G. Smith, in determining the social stratification of a community. This systematic means of objectively classifying societies enhances the internal validity of the study.

Brown then systematizes the testing of his hypotheses by defining "patterns of historiography," that is, what is classified as good (based on objective accounts of the past) and bad historical renditions (myths). Sound history (historiography) maximizes its objective content, relies on primary sources whenever possible, and minimizes its subjective content. Historiography is based on the authenticity, validity, and truth of the event communicated, and on the effectiveness with which the knowledge is communicated. Ultimately, sound history is based on Brown's subjective assessments. However, he uses Hexter's [1968, p. 384] "reality" rules and Brown looks

for precise orientation in space and time, accurate chronology, the ability to detect anachronism, access to trustworthy sources, critical procedures for evaluating sources, an adequate psychology, logical coherence, the exclusion of physical impossibilities, and a minimal resort to the supernatural [p. 12].

Historiography includes two criticisms that are peculiar to historical research: internal and external criticism. External criticism refers to the authenticity of the data source and internal criticism refers to "the *content* of the source or document and its meaning" [Kerlinger, 1973, p. 702].

Brown minimizes internal criticism (seeking "the true meaning and value of the content of sources of data" [Kerlinger, 1973]) by recording patterns associated with open and closed stratified societies. For example, Brown notes a society's degree

of individualism, conception of human nature (uniform vs. nonuniform), extent of biographical writings, realism of portraiture, extent of uniformity in education, humanistic-secular orientation, extent of interest in natural and social science, and elaboration of divination. These traits tend to accompany open stratification and are not present in closed stratified societies. The consistency of these patterns being found or absent in open or closed societies provide strong evidence that Brown's interpretations did not distort the truth. Rather, Brown's interpretations were found to be consistent with the historical facts. As stated earlier, Brown examined many testimonies and written documents of a common account for consistency, which minimizes external criticism.

Finally, Brown applies his tests to not only one set of closed and open stratified societies but to three closed (cast) societies, Java, Bali, and Malaya (including the Brunei), and to three open stratified societies, Burmese (Burma), Vietnamese, and Macassarese (Makassar/Bugis). These additional comparisons enhance the generalizability (external validity) of his findings across similar societies and adds more validity to his results when compared with competing hypotheses.

Unlike external validity, internal validity is more difficult to control in historical research. When in the field collecting data, the historian cannot manipulate his/her independent variables. Thus, Brown has to provide evidence on why his independent variables (social stratification type: open or closed) has an effect on quality of historiography rather than some other independent variable. Other independent variables that are supported as "determinants of ahistory" include agriculture, religion, economic conditions, literacy, and political decentralization. After Brown investigates these independent variables in the societies he studies, he concludes that while these alternative variables "explain some variation, they explain relatively little of it" and do not always apply across societies [p. 307]. Brown further provides many examples of the failure of alternative variables to explain the quality of historiography of societies [see pp. 307-315].

Brown's scientific approach to conducting research provides a valuable guide to those who desire to do historical research. For historical seminars, this book would be useful in illustrating use of the scientific approach in developing empirical historical research studies. This book should be read by all who are interested in accounting historiography because Brown uses scientific research methods to provide convincing and

powerful evidence that open stratified societies spur good and sound historiography and closed stratified societies are associated with ahistory. Brown also provides an interesting, entertaining, and intellectual walk through non-Western cultures.

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CHAMBERS ON ACCOUNTING: *MOTS*
 AGAINST THE CURRENT

by Chris Poullaos
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The conclusion of a paper by R. J. Chambers published in 1950 expresses concern that "after reviewing the progress that has been made over the last twenty years in codifying accounting concepts, some may feel that [my] discussion has upset the system of rules that was, till now, becoming accepted . . ." [Vol. I, p. 26]. The conclusion of a paper by the same author published in 1980 deals with the conditions under which the myths of accounting might be swept away while pointing out that "innovations take time" and decrying "the principle of unripe time" [Vol. III, p. 496]. In the intervening 30 years Chambers had, as well as persisting with his attempts to upset accept rules, developed and promoted an alternative to those rules; and he continues to do so. In the process he has constructed a coherent view of the function of accounting information within the social matrix in which it is embedded [Vol. III, p. 485]; of what the nature and structure of an accounting discipline might be, of the relationship between the academy and the practitioner, between the teacher and the researcher, the teacher and the

student, the accountant and other specialists, between the accountant, management and other parties affected by the accountant's work, between the history of accounting, its problematic present and its potentially illustrious future, and between accounting and other disciplines. Having begun his career among the trees his project spurred him to put together a novel and controversial view of the forest.

Chambers and his University of Sydney colleague Graeme Dean have performed a valuable task in pulling together into a five-volume collection (some of) the results of Chambers' critical and constructive endeavours "against the current" in the period 1948 to 1985. There are a number of overlapping reasons why this collection might be of interest to accounting historians; a number of overlapping uses to which it might be put.

First, it can be used to elaborate (and test) the claim made by Lee [1987] and others that Chambers has had a significant influence on accounting thought. As evidence of his influence one would expect the positions found in these volumes — the arguments, the evidence, the forms of argument and so on, to be taken up by others. (Alternatively the impact may have come by means of resistance by others.) In addition, it can be used to trace the influence on Chambers of others from within and from outside the accounting literature [*ibid*]. In this regard it can be used to trace the importation into the accounting literature of the work of non-accountants, Chambers having long argued that the accounting theorist would do well to look beyond accounting itself (e.g., see the first essay in Vol. III).

Second, moving from the "individual" level, the collection might be used as one input into a study of relations between the accounting literature and other events, other levels of activity. Chambers and Dean themselves point out that the period in which the pieces in the collection were produced was one of substantial business growth, increasing stock market activity, rising public expenditure and tax collections, and occasional surges of inflation. It was a period in which there occurred changes in the scale and style of the accountancy profession and in the concerns of professional associations, instances of corporate failure and litigation raising issues about accounting and auditing practices, expansion in the number of accounting journals, accounting professors and accounting departments in universities and colleges, among other things [General Preface, Vol. I]. The reader can probably think of others not listed here and not listed by Chambers and Dean. How did these things

affect Chambers' work (and vice versa); how were they represented in Chambers' work compared to the work of others?

Third, as implied in the introduction to this review, Chambers' work contains a detailed and as Whittington [1987, p. 842] points out, a perceptive critique of accounting practice (and discourse about such practice); however the alternative developed by Chambers has itself been the object of resistance and criticism. In short, the collection provides material for a case study of the emergence of and resistance to innovation in accounting. Why, for example, when alternatives to "historical cost" accounting were under serious consideration in a number of countries in the 1970s, was CoCoA not put forward by any professional association or government committee. (The collection doesn't answer this question but it does provide some of the data.)

Fourth, and closely related to the previous point, Chambers has engaged in academic debate, not just with "a wide range of the leading accounting theorists of the 1950s and '60s" [*ibid*] but also with A. C. Littleton, Paton (pre-1950s), Ball and Brown, Beaver and Demski (post-1960s), amongst a great many others. In the course of doing so he gradually developed and then defended various aspects of the case for CoCoA against a wide variety of criticisms and approaches. Not only has he attacked "historical cost" accounting, and defended CoCoA against proponents of that style of accounting and alternative forms of "current value" accounting, but he has defended the importance of that debate as other issues and forms of research have become more fashionable. (For example, see Vol. III [pp. 195-212, 425-440, 462-481] and Vol. V [pp. 217-225]. The last paper in Volume 5 [pp. 489-507] is the fruit of belated attempts to engage in a more fashionable form of "empirical substantiation" [p. 491] than appears elsewhere in Chambers' work). One result is that chronological reading of the papers in the collection provides a fascinating albeit partial view of shifts in academic accounting discourse from the late 1940s to the mid-1980s. Also noticeable is the *persistence* of certain positions. To take but one example, in the 1980 paper referred to above [Volume III, pp. 483-496] Chambers attacks the notion that "the income statement is superior to the balance sheet" [p. 495] — a position he had attacked in 1950 [Vol. I, pp. 50-51], if not earlier. (See Vol. I for other examples.)

On a different tack, Lee writes of the accounting theorist that: "His time will come again, and when it does, the work of Chambers will provide a firm foundation" [1987, p. 46]. In a

more critical review Whittington has nevertheless written that "Chambers' contribution to the development of accounting thought will be remembered as a significant one, and these five volumes will provide a permanent source of reference on the development of his ideas." In support of these claims one may point to the rigor, scope and novelty of his work, his pugnacious and detailed articulations and defences of it and its empirical base, controversial though it might be. On the other hand, review of these volumes brings difficulties to mind as well. Without claiming to present an exhaustive discussion a number of issues can be raised.

First, even if one accepts Chambers' defences of his method of observation (See for example Vol. III [pp. 386-405, 483-496]) it is still doubtful that it has been specified in sufficient detail for others to use it — in order to test it, in order to continue its use.

A second, more fundamental and more interesting order of difficulties — rather, of challenges — lies in the direction of up-dating the work in these volumes (and *Accounting, Evaluation and Economic Behavior*) in light of current work in "related" disciplines (economics, history and philosophy of science, social theory, psychology, etc.) — a quintessentially Chamberian project. Such an endeavour, in addition to positioning or re-positioning Chambers' work in relation to mainstream stream trends in accounting (the positive accounting theorists, for example) would, in this reviewer's opinion, require a detailed assessment of the literature inspiring what Chua [1986] has called the interpretive and critical alternatives to the mainstream. As Chua points out, these alternatives incorporate radically different beliefs about knowledge, about physical and social reality and about the relationship between theory and practice.

To pursue this point just a little, Chambers has long held that accounting could and should be both scientific (both as discipline and as practice) and neutral as between uses and users. Consider some of the conundrums which might arise in an attempt to reassess these (and related) positions. There is more involved than developing a position on whether accounting is an art or a science, or on whether standard-setting should be a scientific rather than a political process, or on whether or not the parties affected by accounting information are best left to deal with "accounting" issues themselves. Other issues are now on the agenda. For example, has the application of science been such an unqualified success in other areas that we might wish to apply its methods to accounting (however defined)? Given the

demise of the hypothetico-deductive model how does one re-connect the lessons of scientific endeavour to accounting, presuming one would wish to do so? How would one deal with the claim that the social or “human” sciences are fundamentally different from the natural sciences, the methods of one not being suitable to the other? If one accepts this point — is accounting a human science or is it something else? If one is sceptical about the belief that empirical reality is objective and external to the subject, where does this leave the potential of accounting to produce objective information about “social facts” [Vol. 1, p. 26]. If one does not concede the distinction between means and ends, fact and value; and if one is concerned that accounting functions as an ideological apparatus, incorporating concepts of value which benefit dominant groups in society, how is the notion of neutrality to be rescued? (For further discussion see Chua [1986]. The reader of Chua’s article will note that the issues raised here incorporate elements from both the critical and interpretative alternatives.)

A particularly interesting issue arising here is whether the outcome of an attempt to up-date Chambers’ work would be a case for CoCoA. Such an outcome is possible, maybe even likely (depending on who does it), but is by no means guaranteed. Then again, if such an exercise were done with sufficient care and sufficient rigor perhaps Chambers wouldn’t mind. What remains to be seen is: Who will be brave enough and competent enough to do it? In any case, even for such a project these volumes would be invaluable.

The five volumes between them contain more than 150 separate pieces spread over more than 2000 pages. Included are papers (and poems) published in academic and professional journals, in conference proceedings and in various other places; together with “a selection of texts of addresses and submissions to inquiries not otherwise published” [General Preface, Vol. I]. Volume I consists of “exercises in clarifying one aspect or another of [the] association . . . between funding, functional management, and financial information in the conduct of business affairs” [Preface to Vol. I]. Volume II includes material on “some aspects of practice, pedagogy, and prescripton”. The material in Volume III deals variously with “the general features of theories and theory construction, . . . the general modes of disciplined inquiry”; “relates to specific elements of some actual or potential theoretical discourse, to ideas or lines of argument that seemed to need clarification or refutation”; while “some of the pieces are retrospectives on the development of

accounting ideas" [Preface to Volume III]. Volume IV contains some of Chambers' early papers on "inflation accounting" and his critiques of various forms of accounting devised to deal with the problems arising from changing price levels. Volume V contains some seminal papers crucial to the development of CoCoA, together with elaborations and defences of CoCoA and of Chambers' arguments in support of it. (Material in the other volumes has a clear connection to CoCoA as well.) Within each volume material is presented in chronological order.

As Chambers and Dean concede, the division (or allocation) of material into the five volumes has been "to some extent arbitrary"; and repetition has not been eliminated where the editors deemed it "desirable to indicate the origin or development of some specific theme" [General Preface, Volume I]. For some of the uses referred to above a strict chronological ordering may have been slightly more convenient but the categorization employed does not cause any great difficulty. Nor does the non-numbering of Prefaces and Contents pages. Nor is it a serious reflection on these volumes that for some of the uses discussed above a reader may judge it necessary to look at the body of Chambers' work which has been omitted. (See *Abacus* [1982, pp. 185-201] for a bibliography up to 1982. An updated bibliography would have been a welcome addition. *Accounting, Evaluation and Economic Behaviour* and *Securities and Obscurities*, arguably Chambers' major books, are crucial complements to these volumes.) Another concern, perhaps trivial, arises from the corrections made in original sources. For many purposes it may well be preferable to have an error-free text — indeed to quibble about the elimination of errors might seem like bizarre behaviour to some; but a historian may well wonder about the impact of the errors in the original text. (I am grateful to Graeme Dean for this point!)

The lack of a detailed index is undoubtedly a serious deficiency. Anyone wishing to (say) study the impact of Karl Popper on Chambers' work would literally have to check the footnotes or reference list of every item included in all five volumes to ensure that no reference to Popper had been missed. Anyone who wished to study Chambers' views on (say) "financial position" would have an even harder time.

Nevertheless, Garland is to be commended for making these volumes possible. Apart from the uses referred to above they can assist those who wish to teach a course on the history of accounting thought, or a course which covers CoCoA, or a course in which it is considered desirable to expose students to argu-

ments to the effect that, as far as accounting goes, we do not necessarily live in the best of all possible worlds.

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Reviewed by
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The *Spanish Review of Finance and Accounting* has been published since the early seventies. In 1985, the Spanish Association of Accounting and Administration assumed the sponsorship of the journal. As many practitioners as academics belong to the Association, and the editorial policy of the *Review* is to promote the publication of special issues that address the interests of both groups.

Reflecting this policy, the *Review* has published a special issue on the history of accounting. Limitations of space have made it necessary to present the issue in two volumes. The editor is Esteban Hernández-Esteve. In total, the issue comprises 9 articles, as well as a superb introductory essay by the editor.

The bulk of the articles — six, actually — concern the period from the end of the fourteenth century to the beginning of the seventeenth. For the purposes of the present discussion, these articles have been grouped according to three broad themes:

- identification of the first double-entry accounting records produced in Castille.

- the role of accounting as an instrument of control in public administration.
- particular accounting methods as addressed in the first book on accounting written in Castilian.

The search for the first appearance in Castille of double-entry bookkeeping is a lasting preoccupation of accounting historians. This monograph presents three such articles, written by Carlos Alvarez-Díaz (“Diego Ordóñez, Businessman and Cleric: The Remains of His Private Archive [1497-1520]”), Esteban Hernández-Esteve (“An Historical Commentary on the Account Books of Diego Ordóñez, 1518”) and Fernando Martin-Lamoroux (“The Court Book of Ochoa Pérez de Salinas [1498-1500]”). The first two deal with the records of the clerk Diego Ordóñez, found in the *Archivo General de Simancas*. Carlos Alvarez-Díaz makes an important contribution by presenting and transcribing Ordóñez’s private records. The survival of such an extensive private archive is unusual in Spanish historiography. In this case, the fact that these records were combined, on Ordóñez’s death, with those of a nephew, who was treasurer of the *Casa Real*, has guaranteed their survival. The records are of three types: a) commercial and financial; b) religious; and c) testamentary.

Like so many Castilian merchants of the period, his activity was basically financial. Diego Ordóñez speculated in letters of exchange, enjoying the interest from capital circulating in the fairs and exchange markets. He also developed a sideline as a seller of high-quality cloth, dyed in Valencia. In his absence, this activity was controlled by his mistress. The economic activity developed by this woman was remarkable as was that of his aunt, who would later be the executor of his will.

Ordóñez’s bankruptcy occurred as a result of bad financial dealings. In a certain sense, Diego Ordóñez was a child of his age; an age in which, in Castille, the pursuit of wealth by enterprise began to be abandoned in favor of the commercial transactions that could result from administrative contracts with the imperial government.

Esteban Hernández-Esteve carefully reviews the documents presented by Alvarez-Díaz. For this he employs not only the accounting documentation, but the whole appendix of documents, which allows him to reconstruct the economic activities underlying the operations of Diego Ordóñez during the Fair of Medina del Campo in 1518. The fact that these operations concern only the activities related to the Fair prevents us from knowing more about the patrimony of Ordóñez. In any case,

Hernández-Esteve concludes that the entries follow formal double-entry procedure. It would be interesting to speculate on the relationship between a "high" technology activity such as the manufacture of high-quality cloth and the enterprising vision of a business that accompanied it, and the development of a modern business control system such as double-entry book-keeping, which transcended the traditional purpose of account books as instruments of judicial proof.

The ledger of the banker Ochoa Pérez de Salinas, on which Fernando Martin-Lamoroux comments, is older (1498-1500). This banker was heavily involved in loans of different types, which underscores the volume of his business transactions. The term *libro mayor* does not appear in the title of the book although evidence seems to indicate that the contents are equivalent to a ledger. Terminology typical of double-entry (*deve y a de aver*) is used and the redaction of the entries is also traditional. The evidence appears to show that this book is but one part of a well-coordinated system of multiple books. As in the case of Diego Ordóñez's accounting, the numerals are basically roman.

The functioning of accounting as an instrument of control in public administration is examined in two other articles: "The Reform of Municipal Accounting in Seville and the Introduction of the *Libro de Caja*, 1567," by Jose I. Martínez-Ruíz; and the "Memorials of Salavert, Castilian Gentleman," by Esteban Hernández-Esteve. The first work looks at the introduction of double-entry bookkeeping into the municipal government of Seville in 1567. This reform was the result of a wider municipal accounting reform motivated by the serious financial situation that had befallen the city in the 1560s. The article, therefore, presents us with evidence concerning larger issues, such as the causes underlying accounting system reform. In this case, a crisis situation in municipal finance promoted the intervention of an expert, who supported, almost 25 years before its adoption in the *Hacienda Real*, the introduction of a double-entry system. In this case, centralization, order, clarity and accounting control were pursued on behalf of better management of public resources.

Along these same lines, Esteban Hernández-Esteve analyzes the memoranda of Salavert. At this time problems of public finance (*of the Hacienda Publica*) were critical, especially after the suspension of payments in 1575. Hernández-Esteve's study puts in relief the climate of secrecy and distrust that reigned in the Court (Salavert wanted to be very sure who heard his

comments). Salavert reached the following conclusions, among others: that the indifference of those who governed was the root of the situation that had befallen the country; and that it was necessary to adopt double-entry bookkeeping, that is, the *Libro de Caja*, in the *Hacienda Real*, an accounting practice that had been decreed as obligatory in the private sector since 1549.

The third block of articles is comprised by Jose María González-Ferrando's "The Three Ways to Keep Accounts, According to the Lawyer Diego del Castillo, Native of Molina". The article describes the three forms of bookkeeping in Castille at this time: by *data y recibo*, by *deve y deve aver*; and by *cargo y descargo*. The account book at this time took a juridical perspective, which dominated business methods in Castille and was totally contrary to Catalan dynamism in commercial organization. It is within this context that Diego del Castillo wrote his book, the technical aspects of which are skillfully analyzed by González-Ferrando. In addition, included in the article is a comparative study of Del Castillo's text with those of Bartolomé Salvador de Solórzano (1590) and Claude Irson (1678). González-Ferrando concludes that the terminology used by Del Castillo is technically more precise than that of Solórzano and that the three methods of accounting are essentially the same as those enunciated by Irson 150 years later.

Completing the monograph are three other articles. Enrique Fernández-Peña has compiled the legislation concerning joint stock companies (*Sociedades Anónimas*) in nineteenth-century Spain. María del Pilar Pérez-García examines the five accounting ordinances that the Castilian mints had to follow during the period 1497-1730. Finally, Rafael Conde investigates the activities of the bank belonging to Pere Descaus and Andreu d'Olivella during 1377. This study is based on the journals and documentation extracted from the ledgers located in the *Archivo de la Corona de Aragón*. The article tries to determine the significance of the Usher entries as well as investigate the role of the bank of Barcelona during the last third of the fourteenth century. Conde divides the bank's activities into two parts: banking and non-banking operations. The study of the first reveals that although checks in the strict sense have not been found, formal written orders evidencing the use and acceptance of checks survive. Regarding the requirement that orders of payment be made in person, it appears that the Barcelona bank had superseded this constraint and accepted written orders. Likewise, it is interesting to note that deposits were not remunerated by the bank.

Besides banking operations, the bank traded in cloth, sugar and saffron, and it had ties with eastern Mediterranean ports, such as Beirut, Alexandria and Damascus.

Since the account books were not kept in double-entry, the benefits accruing to the bank would be impossible to determine except for the existence of a secret book which accounted for the results. Although the bank's accounting has similarities with double-entry in terms of ledgers with counterpoised sections and the monetary unit, it is different from double-entry in that only personal accounts exist (as in the Tuscan bank of the same period) and the books do not balance.

In conclusion, the monograph is an excellent contribution to the study of Spanish accounting history and is a good reflection of current research trends. The documentation included in the articles is especially careful and considerable editorial comment is devoted to it. If we bear in mind that great quantities of primary source material in Spain have yet to be discovered and that the preservation of source documents is in a bad state (It is estimated that only 10% of the documentary sources in the *Archivo de Indias* are in good condition), this emphasis on the presentation and transcription of original documents is especially praiseworthy. The monograph also permits us to gauge the place and contribution of Esteban Hernández-Esteve: he has edited the monograph, realized an excellent introduction to the articles and authored two interesting articles on the history of accounting in Spain. His efforts have been instrumental in awakening interest in accounting history on the part of economic historians and archivists. Their contribution, the importance of which is also demonstrated by the monograph, will enrich research in accounting history.

Anne Loft, *Understanding Accounting in its Social and Historical Context (The Case of Cost Accounting in Britain, 1914-1925)* (New York and London: Garland Publishing, Inc., 1988, 325 pp., \$40)

by Victoria Beard
University of North Dakota

It is refreshing to come across a work which makes a conscious effort to cross disciplinary boundaries. In this historical/sociological inquiry into the professionalization of management accounting in Britain through 1925, Loft argues that cost accounting is too important to modern society to limit

its historical study to the traditional chronological narrative, to official histories of professional associations, to studies of accounting solely within organizations, or to comparative histories of technological and procedural developments. Instead, her interest is in understanding how cost accounting acts on, and reacts to, wider contemporary social and political issues.

In Chapter Two, in order to present the theoretical groundwork, Loft makes extensive use of Michel Foucault, the French social historian. She concentrates on his 1977 work *Discipline and Punish: the Birth of the Prison*, where he analyzes the transition to industrialization and modernization in France through the 19th-century disciplinary institutions (prisons, hospitals, workhouses, schools, factories) and their related disciplinary technologies. Foucault writes about the intimate, interchangeable relationship between power and knowledge, that each begets and reinforces the other. Loft proposes to use Foucault's knowledge/power continuum to study how social relationships are modified by management accounting and by the establishment of a professional association of cost accountants.

Cost accounting produces a visible record (Foucault's "knowledge"), a positive reality measured in monetary terms, that claims the status of sole truth about events. Loft explains that the knowledge generated by accounting systems is not neutral but is intimately linked with the operation of power and discipline in the factory. Management accounting is a disciplinary technology, a technique of surveillance and of detailed control of the individual.

Records are not just an enabling device for power to use; the creation of a record is an act of power itself. Not only does it represent the result of a choice concerning what is important in the organization but its creation can induce obedience [p. 35].

But unlike corporal punishment in past centuries, this new disciplinary technology is aimed at the "soul" of the individual.

Again using Foucault's terminology, Loft argues that detailed record-keeping should also be seen as a human science involving "the creation and application of knowledge about man; albeit man reduced to the cipher of the number on the page" [p. 22]. Cost accounting's peculiar attribute is that it duplicates production activities in paper form, providing a permanent, visible, timeless, and apparently objective truth that allows for discipline to continue long after the event.

Loft discusses at length two other modern techniques of discipline in the factory from a socio-historical perspective: the precise measurement of time and the visibility of management. Control through visibility has its roots in Jeremy Bentham's 1789 plan for what he called a penitentiary panopticon, an architectural embodiment of discipline through visibility. The panopticon was to be a circular prison with open, visible cells surrounding a central observation tower which itself would have a series of shades to prevent the observer from being seen by the prisoner. Both control and reform were thought possible simply through this constant unseen surveillance. When transferred to the factory, the "disciplinary gaze" retained its anonymity and omnipresence, but took on the pyramidal structure of management.

In the last part of Chapter Two, Loft begins to address the main topic of the rest of the book — the history of the rise of professionalism among British cost accountants — with a concise summary of sociological theories of professionalism, from Max Weber's closure theories to Foucault's disciplinary model of knowledge/power.

As a foundation for an entire book, this "theoretical chapter" has the weakness of recapitulating existing theories rather than generating new ones. In this way it is more typical of a dissertation (the book is based on Loft's) than of a novel theoretical work. The strength of the chapter comes from her original application of existing theories to cost accounting. When major portions of this work were published as an article in the journal *Accounting, Organizations and Society* [Loft, 1986], this chapter was omitted.

For her historical methodology, Loft adopts Foucault's "genealogical history," or history as an illumination of the present through detailed analysis of past social and historical conditions (not a reconstruction of the past from the anachronistic viewpoint of the present), a variation on Croce's dictum that all history is contemporary history.

Her genealogical history of the present begins in Chapter Three with an historical search for early manifestations of management accounting and incipient professionalism. During the Industrial Revolution (1750-1840), the independent village artisan was moved to the factory. This necessitated the development of intensive labor management practices in the Age of Capital (1840-72), which in turn needed the support of a growing bureaucratic clerical workforce. During the Great Depression period (1873-96), accountants distinguished themselves

as independent professionals in charge of bankruptcies and audits, but continued to distance themselves from costing activities. By the Prewar Period (1897-1914), however, cost accounting had marginally entered the discourse in textbooks and in professional examinations.

Chapter Three is a marvelous example of history written through a sociological lens, focusing on generic issues as they relate to management accounting (centralization of authority, shifting hierarchy of occupations, coalescing of a body of knowledge) with only a secondary interest in unique historical events, politics and personalities. Loft makes good use of quotations from contemporary observers, and her fluid writing style complements the ebbing and flowing of the social forces which she describes. On the other hand, readers accustomed to historical narratives anchored by primary source documents, dates, and statistics may feel uneasy with the heavy use of secondary references.

In Chapters Four and Five, ambitiously entitled "The First World War" and "After the War: Reconstruction and Reality," Loft continues her methodological move from the general to the specific, restricting her reader's attention to management accounting with admirable persistency. Cost accounting emerged in Britain during the war, she says, "as an unanticipated result of the way in which government mobilized the industrial resources of the country" [p. 140]. Unwilling to surrender the capitalistic industrial heritage, even when seriously threatened by profiteering on munitions contracts, the government began a massive program to employ accountants to cost war contracts. Cost accounting, previously regarded by accountants as "somewhat beneath their dignity" [p. 158], gained enormously in stature by becoming a part of the political discourse. Not surprisingly, both Capital and Labor looked forward to the post-war reconstruction period where the same means — modern cost management and scientific production efficiencies — would serve their very different desired ends.

In Chapters Six and Seven, Loft details the difficulties surrounding the establishment of the new professional association, the Institute of Cost and Works Accountants, its internal conflicts, its membership selection criteria, and its examination procedures. The discussion ends with a return to Foucault's theory on knowledge accumulation, its claim of encapsulating the "truth," and the social implications of its ability to generate privilege and power for the profession which claims it.

In her concluding chapter, Loft reemphasizes her commit-

ment to studying accounting in its social and political surroundings, rather than as a purely technical body of knowledge. She recognizes, however, that her own coverage of the interdependent relationship between accounting and the state is limited and suggests this area as a productive direction for future research.

REFERENCES

Loft, A., "Towards a Critical Understanding of Accounting: The Case of Cost Accounting in the U.K., 1914-1025," *Accounting, Organizations and Society*, Vol. 11, No. 2 (1986), pp. 137-70.

Frank J. Swetz, *Capitalism & Arithmetic: The New Math of the 15th Century* (La Salle, Illinois: Open Court Publishing Company, 1987, 345 pp., \$16.95)

by Maurice S. Newman
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This fascinating window into the world of mercantile capitalism at the end of the fifteenth century, together with its associated arithmetical practices, offers an unusual insight into how the burgeoning trade of the time was enhanced by the use of arabic numbers and printed arithmetic texts. This is accomplished by the somewhat unusual device of a completely translated Italian book, the "Treviso Arithmetic," within another book that analyzes the arithmetical practices and the cultural background of the times.

The so-called Treviso Arithmetic was, as its principal claim to fame, the first printed arithmetic book. It was printed at Treviso, near Venice, in 1478 and bore no title and no author's name. The author was most likely a reckoning master, familiar with the computational processes of the time, and writing for a group of pupils or friends about practical uses of these arithmetical concepts. Probably it was not the best book on the subject written around that period but it was the first printed book, it was written in the vernacular for popular consumption, and it was short and to the point. The book was translated by David Eugene Smith, Chairman of the Mathematics Department at Teachers College, Columbia University in 1907 but has not been previously published except for fragmentary references by Smith in articles and speeches.

Picking up where Smith left off, Swetz has published a study of early Renaissance arithmetic based on the Treviso text and has delved deeply into the mathematical and sociological

significance of the contents. As Swetz says in his preface, the "study focuses on a book and its contents but, perhaps more importantly, it also concerns a time (the early Renaissance), a place (the Venetian Republic), and circumstances (the rise of mercantile capitalism and the economic beginnings of industrialization), and how these three aspects molded and affected the directions of human involvement with mathematics." [xvii].

Swetz has done his research admirably. His arguments and suggestions are well supported by some twenty-one pages of extensive chapter and notes, together with a bibliography of historical references, a general bibliography, and a good index.

Chapter One sets the stage for the study of discussing the social and intellectual changes that were going on, the growth of towns and cities, the rise of the Venetian Republic, the position of Treviso astride the great overland trade routes, the development of the Italian Reckoning School, the breaking of the monopoly on intellectual knowledge that came with the printing of texts in the vernacular such as the Treviso Arithmetic, and the subsequent impetus to the rise of a successful middle class.

Chapter Two consists of a short introduction and the free translation by David Eugene Smith of the Treviso Arithmetic in its entirety. The first sixty pages of the Treviso text (pp. 40 to 100) deal with the basic operations of numeration, addition, subtraction, multiplication, and division. The unknown author was selective in his use of methods and was apparently guiding his readers into the best possible approaches to the practical problems that they would face. This part of the text is likely to be useful to students of the history of mathematics particularly as it may relate to such new areas of knowledge as the mathematical operations within computers. The general reader may prefer to skip over several pages and rely on the interpretation supplied by Swetz later in the book. The remainder of the Treviso text deals with practical problems and algorithms that can be useful in their solution. Some of these problems, particularly those involving multiple currencies, could be challenging to students at the high school level. The general reader should read through the problems so as to gain the background for the analysis and discussion in later chapters. The methods of solution may only have appeal to the dedicated historians of mathematics.

In Chapter Three, Swetz begins his interpretation of the Treviso Arithmetic in relation to the environment and times. The required use of Roman numerals was breaking down before the pressure of mercantile needs although acceptance of the

arabic numbers was somewhat slow in coming. The algorithms that could be put to use in trading situations were easy to learn and could be used without elaborate equipment such as counting boards. The evolution of numerals over five hundred years which is presented in Table 3.1 is a most interesting exhibit.

The remainder of the chapter deals with the basic functions of addition and subtraction as they are given in the Treviso text. This is supported by reference to other texts of contemporary and earlier times to show how current usage had developed. The examples are limited to adding or subtracting two numbers and stress is laid on various methods of proof such as "casting out nines" or use of the inverse operation. A minimum number of illustrative problems is given and it would appear that the author expected the student to learn by doing. The cost of printing at that time would also restrict the author to the basic fundamental requirements of his craft.

Chapter Four deals with multiplication and Chapter Five explains division as found in the Treviso text. Each of these chapters is short and to the point. These were considered difficult to teach in a way that the student could fully understand. The concept of multiplication as repeated addition [p. 67] and division as repeated subtraction [p. 85] as used in the various methods described is insightful when we consider that this is the basic method used by an electronic computer. Again, considerable stress is placed on proving out the work by various methods and Swetz interprets the methods used against an historical background to put them in proper perspective.

Chapter Six describes the types of problems that are used in the Treviso text and categorizes them as follows:

1. The Rule of Three
2. Tare and Tret
3. Partnership
4. Barter
5. Alligation
6. Rule of Two
7. Pursuit
8. Calendar Reckoning

These types of problems were clearly of some importance in the late fifteenth century but would be solved algebraically today if they needed to be solved at all. While most people would not know when Easter or Passover will fall next year, neither do they have any urgent desire to know until those holidays come closer. The problems in connection with the determination of partnership earnings bear a marked similarity, however, to

some that have appeared on CPA examinations within recent memory. Barter was obviously a complicated problem when different weights and measures were in use along with multiple currencies and problems of valuation. These still exist although the amount of barter in the commercial world today is relatively nowhere nearly as great.

The final chapter, as its title implies, gives a fascinating glimpse of fifteenth century life, trade, and applied mathematics. Swetz has done an excellent job in recreating the life and times through the analysis and investigation of the problems contained in the Treviso tome. The various commodities that are mentioned in the book are made to reveal the background of the traders, manufacturers, merchants, and eventual purchasers and have them come to life.

The scope of the trade items mentioned in the Treviso is broad, and includes "saffron, pepper, cinnamon, ginger, sugar, wheat, silver, cotton, crimson cloth, French wool, balsam, and wax" [p. 258]. While monetary problems are not too prevalent in the Treviso, Swetz uses other texts of the period to indicate the difficulties in changing from other currencies, the lack of high standards in the coinage of the period, the use of counterfeit coins and the varied weights and measures used in the burgeoning international trade. Swetz points out that Venetian money [p. 271] and Venetian weights and measures [p. 279] became the standard for international trade during that period.

The book closes with a fitting tribute to Professor David Eugene Smith inasmuch as the book probably could not have been written without his prior research interest and translation.

P. Tantral, *Accounting Literature in Non-Accounting Journals: An Annotated Bibliography* (New York: Garland Publishing, Inc., 1984, 325 pp., \$35.00)

by Robert J. Bricker
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It is important for accounting scholars to have knowledge about literature related to their area of inquiry. Even if interdisciplinary literature is disregarded, it is difficult to keep up with literature published in accounting journals, although this has been made easier by indexes such as the *Accountant's Index*, and by various extended bibliographies. Accounting articles published in non-accounting journals are even less accessible.

Scholars interested in identifying accounting literature relevant to their work in non-accounting journals face a daunting task.

This book identifies accounting literature in a set of non-accounting journals. The first eighteen pages discuss the method used in developing the annotated bibliography and its taxonomization. Using *Ulrich's International Periodicals Directory*, eighty-eight important non-accounting journals (seventy not counting journal name changes) ultimately were selected for use from the disciplines of actuarial science, economics, finance, operations research, and statistics (listed on pages 19-21). The list of journals was originally more extensive. However, journals were excluded if the author judged them to be accounting journal equivalents.

Accounting articles were identified by searching titles and by reviewing the substance of individual articles. Most journals were searched from volume 1 — the earliest being volume 1 of *The Assurance Magazine* (1851, one accounting article identified). In total, 460 accounting articles were identified. An annotated reference for each accounting article was prepared, and each article was classified using a variation of CCH's *Accounting Articles* taxonomy. Articles are listed in the book in taxonomic order, and a separate index of authors' names appears on pages 213-224.

This database is most useful for referencing accounting articles in the fields of actuarial science, economics, and statistics, which among them contain 81 of the 88 (unadjusted for journal name changes) journals studied. The taxonomy used is unidimensional, and provides for quick referencing within the set of taxons. The visual layout of the individual references is good. The individual references are well prepared and the abstracts are concise and easy to understand. The author largely avoided the use of cryptic phrases in favor of longer but far more useful comments.

A different approach to taxonomization and a somewhat different mix of non-accounting journals might have increased the useability of the database. While the CCH taxonomy is detailed, it is nonetheless unidimensional and classifies articles by subject-matter. The author ameliorates this condition to some degree by classifying articles under both a primary and secondary category (although still on subject-matter) and by providing the author index. A different taxonomization approach is used by Vasarhelyi and Berk, as noted by the author, which classifies articles multidimensionally — for example in terms of research-method and foundation-discipline (among

others) in addition to subject matter. This approach, of course, would have required additional indexes for referencing articles.

Some also may question the choice of journals covered — particularly in terms of 1) disciplinary coverage and 2) the author's categorization of accounting-equivalent and non-accounting journals. Some disciplines, such as sociology, history, psychology, organizational science, and management are notably absent. In others, some important journals are missing. In political science, for example, which is covered in the database under "economics," journals such as *Public Choice* might have been included. One way to identify potential accounting articles in non-accounting journals not included in this database would be to examine their citations of accounting journals, as summarized in the Social Science Citation Index. Journals with high accounting journal citation rates probably also publish accounting-related articles.

Some of the journals excluded from the database for being accounting journal equivalents appear to be more similar to accounting than some that were excluded. The database excludes the *Journal of Law and Economics* and *Industrial and Labor Relations Review* as accounting journal equivalents, yet includes the *Journal of Business*, the *Journal of Finance*, and *Management Science* as non-accounting journals. Not surprisingly, these last three journals contain about one-quarter of the database's articles.

Despite these features, *Accounting Literature in Non-Accounting Journals* can be a useful and time-saving tool for accounting scholars who are interested in exploring the periodical accounting literature published in the covered non-accounting journals. It is certainly commendable in this way as the first work of its type.

Basil S. Yamey, *Art & Accounting* (New Haven and London: Yale University Press, 1989, 157 pp., \$45.00)

by Stephen D. Strange
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In this book Basil Yamey discusses works of art that include the image of an account book. One might expect a rather brief discourse on such a topic and that of limited interest. However, Yamey develops a number of fascinating relationships between art and accounting and in doing so exposes the reader to novel perspectives of both art and business. The general

reader should not be frightened away by a lack of knowledge of accounting or art as Yamey deals with both areas in a lucid fashion.

The book consists of discussions of works of art in which account books make their appearance. The first chapter, in effect, is a detective story dealing with the identification of account books in paintings. The techniques vary from direct evidence to identity to inference. In addition Yamey discusses the predominance of works of art produced in the Low Countries in the sixteenth and seventeenth centuries in which account books are represented. Throughout the book these insights provide interesting and informative reading.

Chapters two to seven are organized according to subject categories: portraits of merchants, businessmen, bookkeepers, and accountants; bureau scenes; allegories and emblems; *vanitas* still-life paintings; and allegories of commerce. There is no pretense of comprehensiveness in the discussion of the works of art — all are Western works, mainly from the period 1300 to 1800. Yamey weaves in other threads connecting art, history, and accounting and in so doing creates a rich and varied tapestry.

In the final chapter, Yamey expounds on the importance of double-entry bookkeeping and the rise of capitalism, and the influence of the double-entry system on artists and Renaissance art in general. The remainder of the chapter deals with Luca Pacioli, author of the first published work to include an exposition of double-entry bookkeeping (the *Summa de arithmetica* of 1494).

This book will delight the scholar, student, or casual reader. Yamey writes in a clear and concise manner which allows the reader to integrate the text and illustrations in a meaningful fashion. In addition, the notes to the book provide a wealth of material expanding on the illustrations. They are worth reading by themselves and provide expert guidance for further study.

In reading this book the artist will find that art and business are indeed connected, and the accountant will discover new relationships and perspectives about his profession.