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## An Historical Defense of Bookkeeping\*

By HENRY RAND HATFIELD

I am sure that all of us who teach accounting in the universities suffer from the implied contempt of our colleagues, who look upon accounting as an intruder, a Saul among the prophets, a pariah whose very presence detracts somewhat from the sanctity of the academic halls. It is true that we ourselves speak of the science of accounts, or of the art of accounting, even of the philosophy of accounts. But accounting is, alas, only a pseudoscience unrecognized by J. McKeen Cattell; its products are displayed neither in the salon nor in the national academy; one finds it discussed by neither realist, idealist nor phenomenalist. The humanists look down upon us as beings who dabble in the sordid figures of dollars and cents instead of toying with infinities and searching for the elusive soul of things; the scientists and technologists despise us as able only to record rather than to perform deeds.

We suffer perhaps in silence, even, as Carlyle says, "consuming our own choler as some chimneys consume their own smoke," perhaps in public denying that we suffer at all, but here—in a meeting not of accountants, but of university instructors in accounting—we can admit among ourselves that at times this academic attitude does get under our skins.

The contempt for accounting is not limited to university circles, but is well-nigh universal. It is evidenced by ignorance of the subject, by condescension toward its devotees, by their exclusion from polite literature.

And how abysmal that ignorance! I give two instances. The university speaker who said, "If you do so and so your ledger

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\*A paper read before the American Association of University Instructors in Accounting, December 29, 1923.

[speaking figuratively, of course] will show a debit balance." Would he have spoken of an equation with unequal numbers? And the distinguished writer in the October *Atlantic*, thesaurus of culture, supposedly barred to academic solecisms, who says, "In most sections of America the fact that a man or woman has been divorced \* \* \* is something to be set down \* \* \* on the debit side of the account," ignorant that likely as not a debit (as for instance in the bank account) means the imputation of additional value—which I take it is quite contrary to what Mrs. Gerould intended.

But the contempt for accounting is even more clearly shown by a constantly repeated phrase, a phrase which of all phrases is to me the most exacerbating—because of the combination of ignorance and supercilious condescension. This phrase, which I could quote from uncounted sources, is: "That is a mere book-keeping entry." One might as well say, "That is a mere algebraic equation," or, "That is a mere statement of discovered fact," or, "That is the formulation of a mere axiom." Mere truth, mere fact, mere sanctity, mere virtue. Do you wonder that I lose my temper every time I see the phrase? Of course one may make a misstatement in bookkeeping, just as one may lie either in Greek or in German: But that merits some adjective more invidious than "mere."

And remember how accounting has been slighted in literature. The public eye has generally, both in history and in fiction, been turned on the man on horseback, but nevertheless at times there comes upon the stage a more prosaic figure. Great masterpieces have grouped themselves about a scholar as Faust, about a carpenter as Adam Bede, about a manufacturer as in *Les Misérables*, about a sailor as Robinson Crusoe, about courtesans, thieves and beggars beyond recital. Even a horse and a dog have been made the heroes in *Black Beauty* and in *Rab and His Friends*. But never, so far as I recollect, has a bookkeeper been made the hero of novel, play or poem. The bookkeeper is not even honored by being made a noteworthy villain.

Long ago Sir Roger de Coverley assumed that "little that is truly noble can be expected from one who is ever poring on his cashbook or balancing his accounts." Literature has maintained this attitude ever since, and the bookkeeper has reached his apogee in the gentle and pathetic figure of Tim Clerkenwell. Compare

him for a moment with the military hero. The latter appears mounted on a horse, leading, to the music of bugle and drum, his martial columns in charges against the foe, brandishing a reeking sword, and wearing on his brow the victor's wreath of laurel. The bookkeeper too is mounted, but on a quadrupedal stool, he too marshals columns, but of figures to the accompaniment of a clicking Burroughs, his charges are those on the debit side of the ledger, his brow is encircled but by a green eye shade, he brandishes only the humble rival of the sword, guiltless doubtless of his country's blood, and incarnadined only with Carter's cardinal ink.

But it is not good for a man's soul always to suffer under the inferiority complex. Let us no longer bear in humility the lash of contumely. Let us face our contemners, be they classicists, philosophers or scientists.

"No matter if he is a houn',  
They gotta quit kicking my dog aroun'."

Let us boldly raise the question whether accounting, the late claimant for recognition as a profession, is not entitled to some respect, or must it consort with crystal-gazing, sociology, chiropractice, pedagogy and palm-reading.

Three elements, if not conclusively proving, at least presumptively establish, respectability. These are, first, parentage and lineage; second, the company one keeps; and, third, the services which one renders the community. Let us examine accounting in these aspects.

Without raising the question as to accounting in antiquity, we look upon the Franciscan monk Paciolo as the father of modern accounting, as his *Summa*, published in 1494, which was the first printed work dealing with algebra, also contained the first text on bookkeeping, a slender tractate entitled *De Computis et Scripturis*.

Not much can be said of Paciolo,\* aside from his writings, but his academic credentials are flawless. He was an important if not a great mathematician. His first appointment to teach in a university was at Perugia. In less than a year his request for an increase of salary was granted. The reason stated in the official records has a singularly modern sound. It reads: "because he has already taught for two months and has shown himself to be a man

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\*H. Staigmüller, "Lucas Paciolo, eine biographische Skizze," in *Zeitschrift für Mathematik und Physik*, Bd. 34, Historisch-literarische Abteilung. pp. 81-102, 121-128.

of highest learning, and because it appears that he manifestly can not live on such a meagre stipend." Again in less than six months he was promoted, this time with a more permanent tenure as well as increase of salary. Soon afterward he left the university, probably devoting himself to the study of philosophy and theology. He returned to Perugia in 1487, and while he had previously signed himself "Brother Luke," in his later writings he was wont to describe himself as a "humble professor of sacred theology." He held many other university positions, at various times teaching at Naples, at Pisa, at Florence and at Bologna. He ended his career with his highest honor, for in 1514 Pope Leo X appointed him professor of mathematics in the *Sapienza* at Rome, a position in the "university of the highest standing in all Christendom."

In 1496 he was called to Milan by the reigning duke, Ludovico il Moro, whose court was a center of light and learning, and to be established there was a signal honor. Adams in China, Hollander in Porto Rico, Bogart in Persia, Paciolo in Milan—all indications of deserved recognition of professorial eminence—all doubtless to be kept in mind for at least 427 years.

At Milan, Paciolo was brought into contact with many prominent persons, the most significant being Leonardo da Vinci, perhaps the most eminent man of his day. Between the two there grew up an intimate friendship. Da Vinci himself tells that he hastened to buy a copy of Paciolo's *Summa* as it came off the press, and he collaborated with Paciolo on a later book, the *Divina Proportione*, for which Paciolo furnished the text and Da Vinci the illustrations. Honor indeed for a university professor! Would not the most eminent mathematician of today rejoice if the greatest man of his time, say Roosevelt or Henry Ford, had hastened to buy one of his treatises (even though it contained the adventitious attraction of some chapters on bookkeeping)? Would not even one so eminent as William James have been flattered if in his psychology the somatic reactions of the emotions could have been illustrated by the master hand of the creator of Mutt and Jeff?

I need not outline to you the nature of Paciolo's treatise, with which you are familiar, at least through Geijsbeek's somewhat paraphrastic translation. Have any of you not read this you will be interested in it, not merely as a piece of technical literature,

but because of its quaintness of expression, its naïve attention to detail, its exuberance of piety, its flavor of mediævalism.

It is seldom the case that a first book on a subject has so dominated its literature as was the case with Paciolo's *De Computis et Scripturis*. It is nearly true to say that for a hundred years the texts appearing in England, France, Germany, Italy and the low countries were "at the best revisions of Paciolo, at the worst servile transcriptions without even the courtesy of referring to the original author." But further than that many little matters of bookkeeping technique were followed for at least four centuries, merely because they were inculcated by Paciolo, persisting like buttons on our coat sleeves, long after their significance had disappeared. I need not mention these to you, but may I refer to a peculiar instance relating rather to a matter of general form?

Whether it was because of his churchly connections or because it conformed to the customs of his day, Paciolo's book is replete with gems of moral and religious advice. I know not how it may be in the higher branches, such as sociology or Americanization—but in the elementary text-books, such as algebra or chemistry, we do not today find the thread of the discourse interrupted by bits of proverbial philosophy or moral exhortation. But in bookkeeping this has continued down until today. I might cite instances from many of the high school texts used today, from practically all used so lately as ten years ago. But let me take a single extreme example. Soule's book is still in vogue in this country. At the foot of nearly every one of his 749 pages, he has a line quite in keeping with Paciolo. The statement in the earlier writer, "Who does nothing makes no mistakes, who makes not mistakes learns nothing," is matched by Soule's "Our greatest glory is not in never falling but in rising every time we fall." "It costs more to make a good merchant than to make a doctor of laws," is matched with "Experience is not a free school, we all pay for our tuition." But even a fifteenth-century monk can not rise quite to the level of the twentieth-century practical American who tells us "The only amaranthine flower on earth is virtue, the only lasting treasure truth." Bookkeeping was spread throughout the world by a series of plagiarisms and imitations of Paciolo. The habit of imitation became so fixed that in bookkeeping it has persisted throughout the centuries, and even the foibles of Brother Luke are reproduced in the treatises of today.

Let those who vaunt the superior merits of other disciplines remember that this first presentation made by Paciolo was not crude and incorrect but contains the essentials of bookkeeping as we know it today, despite the fact that it was written at a time when chemistry partook of the vagaries of alchemy, biology was a weird collection of errors, and medicine had more in common with the medicine man than it has even today. It may be well to see how this discipline—I do not venture to call it science—compares in its antiquity with the more arrogant natural sciences. In neither case do I go back to the feeble beginnings and adumbrations of learning but compare the position of bookkeeping, as it was first formulated in print by a university professor, with the formulation of natural sciences—not by some dim groper in far-off antiquity—but by the first vice-president of Harvard College. A comparison, thus made, is, I am sure, more than generous to the natural sciences, despite their illiberal attitude toward the social sciences with which, in general, they admit of no kinship.

Charles Morton, who, like Paciolo, was at once distinguished teacher and cleric, was brought to Harvard from England almost two hundred years after Paciolo had formulated bookkeeping. If not professor, he was at least made vice-president, and his work on science was used as a text-book in the college.\*

But he explained the problem of the migration of birds by saying that each autumn they flew to the moon, 200,000 miles distant, a two months' journey, and in his text-book, earthquakes are explained as follows: "They come from choking up of wind below, fermenting, bursting out, causing trembling and strokes." Or dropping into verse:

"In subterranean caverns winds do frolic  
When Mother Earth is troubled with the colic."

How marked a contrast to the teachings of the geologist at the University of California. It is told that when he appeared in court as an expert witness, the opposing lawyer foolishly attempting to ridicule his pretension of knowledge, said: "And do you pretend to know what is going on in the bowels of the earth?" To this the geologist replied: "I do not know that the earth has any bowels."

Only two hundred years ago science—in the leading American college—was a futile and ludicrous display of ignorance. More

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\*The authority for the following statements is found in Meriwether, *Our Continental Curriculum*, pp. 188, ff.

than four hundred years ago, in the the very first book published on the subject, bookkeeping was outlined in a form which still prevails around the entire world. Can not bookkeeping claim an honorable and ancient lineage? Is it indeed an upstart as compared with geology, and chemistry, and landscape gardening, and social psychology, and business English, and olericulture, and otorhino-laryngology, and other cherished subjects of the university curriculum? Founded, like San Francisco, by a follower of St. Francis of Assisi, cradled in mathematics with algebra as a twin, established under the ægis of a great university—surely this is an origin sufficiently academic to give respectability to this our “houn’ dog.” Perhaps I should adopt the language appropriate to the kennel and speak of bookkeeping as having been sired four hundred years ago by a monk, and today damned by thousands of university students, and yet, despite certain questions which the frivolous might raise to a celibate paternity and the extremely puzzling biological enigma of such a multiple maternity, bookkeeping is thoroughly respectable.

But many a house founded by a great man has degenerated and the descendants have been of quite inferior clay. Has the later entourage of bookkeeping been made up of a fair number of respectable persons?

The second book on bookkeeping was also written by a man of distinction, Grammateus or Schreiber. He, like Paciolo, combined algebra and bookkeeping, and his book, dated 1518, was the first work published in Germany dealing with either of these subjects. On the authority of Cantor, he stands, as a mathematician, unquestionably in the front rank of his time.

Almost immediately following Grammateus was Jerome Cardan, that picturesque scapegrace and brilliant scholar, astrologer, physician, scientist, mathematician, professor of medicine first at Pavia, later at Bologna. He, too, wrote a book combining algebra and bookkeeping. This work, says Richard Garnett, marks an era in the history of mathematics, being the first in which the principle of cubic equations was fully explained. Everett says it is one of the most valuable contributions to the literature of algebra. As a physician he was so eminent that he was called to Scotland, no mean journey in those days, to attend an archbishop; he was famous enough as an astrologer to visit the court of Edward VI to cast the king’s nativity. But his chief claim to dis-



tion is his general scientific attitude, so far in advance of his times. Says Garnett: "Alike intellectually and morally, Cardan is one of the most interesting personages connected with the revival of science in Europe. He possessed the true scientific spirit in perfection. As a mathematician he effected most important advances, and to complete the catalogue of his accomplishments he is no contemptible poet." And to add picturesqueness to his career he became involved in difficulties, was addicted to gaming, imprisoned for debt, banished from Milan, was later deposed from his professorship, imprisoned, released, prohibited from further teaching, but spent his latter years in Rome as a prisoner of the pope.

Out of the first six writers three are thus seen to be men of eminent distinction—in fields other than that of bookkeeping, as judged by persons who are not themselves particularly interested in bookkeeping. Surely the early days—if not the unknown origin of bookkeeping—are sufficiently respectable so that we need not be ashamed.

Extending somewhat the field of survey we find that Brown lists only 150 names of writers on bookkeeping before 1800. But even the reduced list of those who have reputations in fields other than bookkeeping is too long to repeat in detail. These are not a group of narrow specialists. One finds there authorities on algebra (as is to be expected), on navigation, on optics, a commissioner to settle the foreign exchange, the author of the French code of 1763 (who not only had this great code named after him, the Code Savary, but is perhaps even more distinguished by having had seventeen children who also bore his name), astronomers, a French grammarian, an authority on gunpowder and the historian of the Baptist church. To find these names in the *Encyclopædia Britannica* one does not look under accounting or bookkeeping—these articles are scant and unsatisfactory and both contain misstatements concerning the history of the subject—but under the following rubrics: algebra, camera obscura, deaf and dumb, earth figure, fortification and siege craft, gravitation, infinitesimal calculus, insurance, logarithms, mathematical tables, Napier, and navigation.

Perhaps I may be pardoned if I mention more specifically three of the names. There is Simon Stevin. Cantor styles him a Dutch mathematician, but says his claims to fame are varied. He

invented a horseless carriage which worked, he was first to solve some problems regarding polyhedra, he proved the law of equilibrium on an inclined plane, he discovered the hydrostatic paradox, he explained the tides by the moon, he devised new forms of fortification, was many times public officer, a soldier and statesman, and the first to introduce decimals. Yet he thought it well worth while, in 1602, to write an extended treatise on bookkeeping for the express purpose of training his royal pupil, the prince of Orange.

There was Charles Hutton, a colliery boy, who became teacher of mathematics at eighteen and later professor at the royal academy at Woolwich, fellow and foreign secretary of the Royal Society (three others in the brief list were also fellows of that distinguished body), perhaps most famous for his computation of the density of the earth, an achievement recognized by Laplace and said by various competent critics to show ingenious and important methods, which can hardly be improved upon, author too of a work on conic sections said by Montucla to be a model of precision and clarity, receiver of the Copley medal for his paper on gunpowder, and doctor of laws of Edinburgh. And yet this man, who could weigh the earth as in a balance, condescended to write a text-book on bookkeeping, a subject which many think worthy the attention only of writing masters and proprietors of business colleges.

There was Robert Hamilton, who after some years' experience as a banker, betook himself to teaching, and was professor first of natural philosophy and later of mathematics at Aberdeen; famed, however, more as an economist, for it was he who exposed the economic fallacies of Pitt's policy of the sinking fund. Yet this man, banker, merchant, mathematician, capable of confuting England's master statesman, thought it not beneath his dignity also to write on bookkeeping.

I have limited this survey to writers before 1800. I will mention only two persons since then. Augustus De Morgan, whose eminence needs no description, was so far interested in bookkeeping that one of the best elementary books ever written on the subject acknowledges that it is based on the suggestions of De Morgan. And finally Arthur Cayley, who thirty years ago turned aside from his duties as professor of mathematics at Cambridge long enough to write a most excellent work, entitled *The Principles of Double-entry Bookkeeping*.

I have cited illustrious men who have written on bookkeeping rather than illustrious writers on bookkeeping. I did this merely to establish the argument that bookkeeping is a subject worthy the attention of men of ability—not to be relegated to the ordinary business college.

But not all who have attempted to write on the subject have succeeded. He may, like Grammateus, stand high as a mathematician, and yet, as a writer on bookkeeping “deserve no praise beyond that of being the first German who ventured to write on that difficult subject,” producing a book, which Row Fogo says is “so confused that it is extremely improbable that he himself knew much about what he was attempting to teach.” He may, like Cardan, show originality and genius in science, yet as a writer on bookkeeping be worse than banal. He may, like Collins, hold an honorable position in the Royal Society, yet produce a work on bookkeeping which receives no particular mention by the historian of the subject. He may, like Hamilton, deserve the encomium of McCullough, that he succeeded in the impossible task of opening the mind of the British public on an economic question, and yet have the *Encyclopædia Britannica* say that his work on bookkeeping is now forgotten. A man of distinction may write on bookkeeping; his work in that line is not necessarily distinguished. Would it be fair to say that it takes a peculiar genius to make a success in that subject?

The third presumptive evidence of respectability is that one performs some important service in the world. Can this be said of accounting? Perhaps this can best be answered by showing that bookkeeping appeared, not as a chance phenomenon, but distinctly in response to a world need. This is true not only of the days of Paciolo, but, as I hope to show, of that more important, almost present-day, revival.

It is not without significance that bookkeeping appeared at the end of the fifteenth century, nor that its birthplace was in the Italian republics. We all know of the marvelous awakening of that period, and particularly of the sudden expansion of commerce. Sieveking, one of the few historians who has paid attention to the subject, says that bookkeeping arose as a direct result of the establishment of partnerships on a large scale, a feature of the expanding commerce.

But bookkeeping dozed for several centuries, and it was not until just about four hundred years after Paciolo's book, that a startling awakening took place. New works in unheard-of abundance and of a new quality began to appear, and again the the universities seriously undertook instruction in a subject which had fallen into academic disrepute.

Why this new prominence in a subject taught before 1500? The answer is so obvious that I offend by explanation. The end of the nineteenth, even more than the end of the fifteenth century, was marked by a most extraordinary expansion of business. Then was the period of the organization of the great corporations (ordinarily called trusts), a phenomenon common to America, England and Germany. Then came that new appearance, the billion-dollar corporation, and just then—not a curious coincidence but a necessary response—accountants woke up. Garcke and Fells started the list of works on cost-accounts, Pixley first and then Dicksee began their voluminous writings dealing with the more refined problems of corporation accounts, England chartered the Institute of Chartered Accountants, New York set the example, since followed by every American state, of granting the title of "certified public accountant," the adding machine was invented, logarithms were placed beside the ledger, books were written, conventions were held, accounting was.

In part the new significance of accounting is due to subdivision of ownership and the severance of ownership and control so characteristic of the corporate form of business organization. If the substitution of a small partnership for the individual trader called for improvement in bookkeeping methods, how much more was improvement needed when the partnership was displaced by the corporation with its owners numbered by the tens of thousands.

But still more significant has been the great investment of fixed capital characteristic of modern production and made possible by the organization of corporations. The use of fixed capital on a large scale increases incalculably the difficulty of determining the profits earned in any given year. Paciolo made no serious effort to do this. Business in his day was a congeries of disconnected ventures. A ship went here, a caravan there, a joint venture was undertaken with Messer Juan Antonio in French wool, and a flyer was taken in *ginger michini*. As these ventures fell in,

the profit gained in the completed transaction was ascertained, somewhat roughly, it is true, but fairly satisfactorily. But no attempt was made to deal with unfinished operations.

But today business is a continuum. Machinery serves for many years, the factory building stands for a generation, the railroad is built to last forever. The industrial process is made up of a never-ending stream of raw materials, goods in process and finished commodities. Expenses are incurred in common and not like the expenses of a caravan solely in connection with one parcel of goods. But man is strangely agricultural in his tradition, even though society has become industrial. Time was when the recurring cycle of the year was of immense significance to him, for seed-time and harvest each came in connection with the course of the earth around the sun. And man still thinks that he must reckon results in terms of the accidental period involved in such a circuit. We demand to know how much a concern makes in a year. We must know, because the reciprocal rights of preferred and common stockholders may be altogether changed, depending on whether profit is to be attributed to the month of December or to the following January. We must know in order to satisfy the demands of the income-tax collector. And so accountants are asked to perform the hopeless task of taking this economic continuum, of chopping it up into arbitrary and meaningless lengths called a year and apportioning to each such year a proper part of the cost of a building which will last fifty years, of a machine which will be used for twenty years, of a blast furnace which will last ten, and of a stock of coal bought in December which will all be consumed before spring again appears.

Progress in the science seems slow. There stand out, however, two contributions of present-day accountants, one of practical, the other of theoretical importance. The first, made by America, consists of innumerable little devices for saving work in the handling of great masses of figures. Cumbersome and needless forms, surviving as tradition from the past centuries in England, and still more on the continent, have been discarded in America and new forms have been introduced by which results can be obtained with less labor. The other contribution has been the attempt to ascertain the exact cost of producing objects or parts of objects or for carrying on processes in continuous manufacture. Manufacturers now must know not only what it costs to make a

machine but what is the cost of each separate wheel, pinion and screw in that machine; what is the cost not merely of a yard of cloth, but of carding, of roving, of spinning, of weaving, of dyeing, of finishing, of selling that yard of cloth. This has been the characteristic scientific contribution of recent years.

Progress is being made. What better evidence is there than that even lawyers and courts are coming to appreciate that there are such things as accounting principles? No longer is it possible for the supreme court of the United States to declare that "the public \* \* \* rarely ever take into account the depreciation of the building in which the business is carried on."\* Never again, I believe, will the supreme court of California repeat the statement regarding depreciation:\*\* "The theory is . . . that a sum should be set aside to be handed to the stockholders upon the sad occasion of the company's demise, as an alleviating salve to their sorrow, but such a thing is all wrong. The theory can not be tolerated for a moment that such a fund is to be stowed away to make glad the hearts of the stockholders."

I have tried to remove the stigma attached to accounting by showing that in its origin it is respectable, nay even academic; that despite its present disrepute it has from time to time attracted the attention of men of unquestioned intellectual attainment; that it justifies itself in that it has arisen to meet a social need. Its functions are to locate responsibility, to prevent fraud, to guide industry, to determine equities, to solve the all-essential conundrum of business: "What are my profits?"; to facilitate the government in its fiscal operations, to guide the business manager in the attempt to secure efficiency. Are not these efforts worthy of any man's attention? And so I close this paper with quotation from men whom all must respect: Scott, the romanticist, declared the profession of accounting "respectable"; Goethe, the universal genius, speaks of bookkeeping as "one of the fairest inventions of the human mind," and Cayley, scientist beyond question, even more significantly declared "Bookkeeping is one of the two perfect sciences." With these I rest the defense of my houn' dog.

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\**Eyster v. Centennial Board of Finance*, 94 U. S. 503.

\*\**San Diego Water Co. v. San Diego*, 118 Cal. 556.