

# Accounting Historians Notebook

---

Volume 9  
Number 1 *Spring 1986*

Article 1

---

Spring 1986

## Henri Fayol, accounting and control: An environmental reflection

Lee D. (Lee David) Parker

Follow this and additional works at: [https://egrove.olemiss.edu/aah\\_notebook](https://egrove.olemiss.edu/aah_notebook)



Part of the [Accounting Commons](#), and the [Taxation Commons](#)

---

### Recommended Citation

Parker, Lee D. (Lee David) (1986) "Henri Fayol, accounting and control: An environmental reflection," *Accounting Historians Notebook*: Vol. 9 : No. 1 , Article 1.

Available at: [https://egrove.olemiss.edu/aah\\_notebook/vol9/iss1/1](https://egrove.olemiss.edu/aah_notebook/vol9/iss1/1)

This Article is brought to you for free and open access by the Archival Digital Accounting Collection at eGrove. It has been accepted for inclusion in Accounting Historians Notebook by an authorized editor of eGrove. For more information, please contact [egrove@olemiss.edu](mailto:egrove@olemiss.edu).



# The Accounting Historians

## NOTEBOOK

Vol 9, No. 1

© Academy of Accounting Historians, 1986

Spring, 1986

## HENRI FAYOL, ACCOUNTING AND CONTROL: AN ENVIRONMENTAL REFLECTION

by  
*Lee D. Parker*  
*Griffith University*

Henry Fayol (1841-1925) was a leading administrator in the French mining and metallurgy industry. After studying at the Lycée at Lyons and the Ecole Nationale Des Mines de Saint Etienne, he was appointed engineer of the Commentry pits of the S.A. Commentry-Fourchambault combine in 1860. By 1888 he had risen to the managing directorship of that company, retiring as chief executive in 1918 but remaining as a director. During his lifetime he was awarded a number of prizes and honors.<sup>1</sup> In 1916 he published his now famous *Administration Industrielle et Générale-Prévoyance, Organisation, Commandement, Co-ordination, Controle*, in the Bulletin de la Société de l'Industrie Minérale.<sup>2</sup> Fayol attempted to develop a teachable theory of general management via a comprehensive set of principles. This theory was intended to demonstrate the benefits of adopting a scientific approach to the management of large organizations and represented the first attempt to outline a general theory of administration.

What have not been recognized by accountants are the contributions which Fayol made to the management view of accounting and budgets, classical management definitions of control employed by accounting writers, and the concept of goal congruence subscribed to by many accounting writers. In briefly outlining these contributions, this paper argues that both his conceptual contributions and his own renowned success as an administrator reflected the socio-economic and industrial environment in which he worked. On this basis it is argued that in part, an important accounting definition and an important accounting concept have been influenced to some degree by the contextual environment of a renowned management writer.

### THE IMPORTANCE OF ACCOUNTING AND BUDGETING

Fayol (1949, p. 5) considered the accounting group to be the "visual organ of business." He saw its role to be one of

Continued on Page 19

**HENRI FAYOL, ACCOUNTING . . .**

(Continued from Page 1)

providing accurate, clear and precise information about the present and future economic position of the organization. In his view an efficient accounting system was a powerful managerial instrument and training institutions paid inadequate attention to the subject. This probably reflected his belief that every organizational function included a financial dimension. For Fayol (1949, pp. 4-5), capital and sources of finance were an indispensable basis for organizational operations.

Indeed, Fayol considered accounting and finance to be of sufficient importance that he specified them as a percentage of total abilities required of different levels of organizational personnel. This is shown in Table 1 (Fayol, 1949, p. 8). Consistent with the importance which he attached to accounting and finance, Fayol advocated its teaching within management training courses, particularly for "higher industrial employees" (Fayol, 1949, p. 83; Brodie, 1967, p. 41).

Fayol also advocated the employment of a corporate "plan of action." Once again, the accounting and finance functions were essential components of this strategy. He required special reports on results achieved during the past budgetary period and an "anticipatory summary" of activities and results for the forthcoming budgetary period. Not only did he advocate constant revisions to yearly forecasts but also the preparation of 10-year forecasts including the same accounting and finance components (along with other elements such as technical and management).

This annual plan recommended by Fayol, closely approximated the accountant's notion of a budget (Pearson, 1945, p. 74). Indeed it could be argued that

since Fayol was a founder of the classical management school of thought and profoundly influenced management thinking for many subsequent decades, management's subsequent view of the importance of corporate budgeting will have prompted its further development by accountants. Of course his (indirect) contribution to the impetus for corporate budget development would only have been one of many, but nonetheless the possibility should not be overlooked particularly in view of his early fame in France and his later fame in English-speaking countries. Indeed the well known management writer Gulick (1937, p. 13) produced a list of the elements of management entitled POSDCORB—planning, organizing, staffing, directing, co-ordinating, reporting and budgeting. He clearly stated that his list was adapted from Fayol's writing in that his "planning," "organizing" and "co-ordinating" approximated Fayol's, while "directing" replaced Fayol's "command," but "staffing" and "reporting" were Gulick's own additions. More importantly, "budgeting was Gulick's substitution for Fayol's "control" (Massie, 1965, p. 389). Fayol's concept of the importance of control in a budgetary sense was therefore being passed on in this way. Certainly accountants from the 1930s onwards placed great emphasis upon control through budgeting (Theiss, 1932, p. 13; 1935, p. 156; Davis, 1932, p. 9; Hawkins, 1935). Fayol's contribution to this view, while having occurred indirectly through his great influence upon management thought, should not be dismissed too lightly, especially given the traditional service provided by corporate accountants to meet management needs and given Fayol's influence upon managers (through management writing and education) over many subsequent decades (George, 1972; Wren, 1979).

**Table 1**  
**Relative Abilities Required in Organizations and Employees**

Employee Type	Abilities Required					Total %
	Managerial %	Technical %	Commercial %	Security %	Accounting and Financial %	
Large Organization:						
Workman	5	85	—	5	5	100
Foreman	15	60	5	10	10	100
Superintendent	25	45	5	10	15	100
Section Head	30	30	5	10	25	100
Technical Dept. Head	35	30	10	10	15	100
Manager	40	15	15	10	20	100
Small Firm	25	30	15	10	20	100
Medium-sized Firm	30	25	15	10	20	100

### DEFINING CONTROL FOR ACCOUNTANTS

While it was clearly not Fayol's direct intention, such has been the repetition of the key elements in his definition of control by accounting writers that it may as well have been written especially for them.

"In an undertaking, control consists in verifying whether everything occurs in conformity with the plan adopted, the instructions issued and principles established. It has for object to point out weaknesses and errors in order to rectify them and prevent recurrence. It operates on everything, things, people, actions."

(Fayol, 1949, p. 107)

Many definitions of control expounded by accountants in the 1960s and 1970s have consciously or unconsciously closely approximated the essentials of this Fayol definition. Often this approximation has taken place in a budgeting context. Jaedicke (1962, pp. 181-182) for instance conceived of control as analyzing present performance in the light of some goal or standard to see if performance measured up to standard or plan, and feeding back information about performance. In 1966, the Committee to Prepare a Statement of Basic Accounting Theory (1966, pp. 45-51)

of the American Accounting Association defined control as a process of ensuring that chosen alternatives were accepted and that plans for implementing them were carried out.

An examination of texts on costing, budgeting and management accounting published since 1920<sup>3</sup> revealed that most authors have not provided any source references for their definitions of control (and indeed in earlier decades, for most of their text). One exception was Garden (1937, p. 236) who referred to Fayol's *Industrial and General Administration*. Only one other accounting writer has shown signs of recognizing Fayol's possible contribution to accounting thought. In his path-breaking study *The Game of Budget Control*, Hofstede (1968, pp. 21, 32, 87) attributed the founding of the idea of budget control for business directly to Fayol and linked his early ideas on budgeting to the still-accepted notion of responsibility accounting.

Could these definitions of control produced in the 1960s and 1970s bear similarities to the Fayol definition merely by chance? While such a possibility can never be disproved conclusively, the

similarities do not appear to be a mere chance occurrence. In the first instance the definitions have been produced by a range of authoritative sources, undoubtedly reflecting and building upon the conventional wisdom concerning control in both the management and accounting literatures. Second, their definitional components are very similar and *closely* approximate the Fayol definition. Third, these authors' general perspective of control appear to be derived from that adopted by the classical management school of thought (as was the perspective of many of their predecessors in the accounting literature) of which Fayol was a major "founding father."

It can therefore be argued that while Fayol may have been thought of as a pioneer in management thought, his influence in certain respects does appear to have spread into the accounting discipline.

### A FOUNDATION FOR GOAL CONGRUENCE

Closely tied to Fayol's view of control were a group of principles that he formulated, called Unity of Command, Unity of Direction and Subordination of Individual Interest to General Interest (Fayol, 1949, pp. 24-26). Unity of Command stated that each employee should receive orders from only one superior and that if this were violated, authority, discipline, order and stability would all be undermined. The principle of Unity of Direction stated that a group of activities having the same objective should have one head and one plan. This was held to be a prerequisite condition for unity of action, co-ordination of strength and focusing of effort. The combination of the three principles of Unity of Command, Unity of Direction and Subordination of Individual Interest to General Interest appears to have laid the

(hitherto unrecognized) foundation for the concept of Goal Congruence which appeared in the accounting literature of the 1960s and 1970s.

The stated object of Goal Congruence, as specified by accounting writers of the 1960s and 1970s, was the structuring of accounting control systems<sup>4</sup> to ensure that personal goals of organization members were in harmony with organizational goals. Indeed, they argued that a personal commitment to formally stated organizational goals should be required of and secured from all personnel (Horngren, 1967, pp. 3-7; Brown, 1972, p. 30; Buckley, 1973, p. 62; Vancil, 1973, p. 77). The formal organizational goals to which accountants were to encourage personnel's adherence were those laid down by top management (Stedry, 1960, p. 17; Welsch, 1971, pp. 22-23; 1976, p. 19; Benninger, 1973, p. 20). What was unique about the goal congruence concept, and what distinguished it from co-ordination, was that it extended down the organizational hierarchy to include the personal goals and aspirations of all organization members. The stated object of control was to ensure a congruence between personal and organizational goals (Welsch, 1976, p. 46; Searfoss, 1976, pp. 375-376; Sizer, 1975, p. 8).

While the Goal Congruence concept has been thought to be of more recent origin, the combination of Fayol's three principles appears to have anticipated it, even though Fayol did not employ the term "Goal Congruence." The meaning imputed to Goal Congruence by accounting writers bore a strong resemblance to the meaning which Fayol attributed to his principles of Unity of Command, Unity of Direction and Subordination of Individual Interest to General Interest. Furthermore, just as accountants appeared to distinguish between Goal Congruence

and co-ordination (explained above), so Fayol (1949, pp. 103-107) had much earlier introduced a principle of co-ordination quite distinct from the group of three principles just enumerated.

Thus, while the accounting literature of the 1960s and 1970s appeared to introduce the concept of Goal Congruence, it appears likely that authors had in fact reverted to a group of classical management principles enunciated by Henri Fayol, a founder of the classical management school of thought.

### REFLECTING THE FRENCH INDUSTRIAL ENVIRONMENT

With respect to the organization which he managed, Fayol was said to be a financial success. Urwick has recorded that when Fayol was appointed chief executive of Commentry-Fourchambault in 1888, the company was on the verge of bankruptcy. No dividend had been paid since 1885. Its metallurgical works were making heavy losses and its coal measures were nearly exhausted. Yet when Fayol retired at the age of 77 years, the company's "financial position was unassailable and its staff of exceptional quality." Fayol is said to have considered his success in restoring the company's fortunes to have been due "to the new style of administration he introduced and to that alone" (Brodie, 1967, p. 3; Urwick, 1956, pp. 21-23).

Both Fayol's management success, his concepts of budgeting and control, and his anticipation of the concept of Goal Congruence can to a large degree be attributed to the environment in which he spent his working life. Indeed it can be argued that both his management style and his concepts emerged as a product of the socio-economic environment peculiar to French industry at that time. A brief review of that environment will serve to illustrate this point.

Until the close of the 1850s and early 1860s, leading steel producers were to be found in Lorraine and Alsace (northeast France), Anzin and Denain (northern France), Fraisans (eastern France), near St. Etienne (southeast of central France) and at Commentry and Fourchambault (central France). Commentry-Fourchambault by the close of the 1850's, however, was entering a period of decline from its prominence of earlier days. General changes of industrial location meant that a large part of French steel making after 1860 gradually shifted away from central France to the north and northeast. The decline of steel making in central France continued to the close of the 19th century (Clapham, 1966, p. 237; Palmade, 1972, p. 156). After 1878, the development of a process allowing phosphoric ore to be used, increased the importance of metal-making in Lorraine. In many locations organizations pursued vertical integration as mines, blast furnaces, steelworks and rolling mills were absorbed into one firm through either amalgamation, joint partnerships, or holding companies and subsidiaries. Ties were formed between the east of France and central or northern locations. The east was the main location for pig iron production while central and northern companies concentrated upon finished or specialized products (Palmade, 1972, pp. 201-203).

Henri Fayol's organization reflected these basic trends. His company was of long-established reputation, operated in central France and suffered failing fortunes at the time of the general decline of the region, but survived and purchased or absorbed not only the Bressac mines and the mines and works of Decazeville but also purchased the Joudreville mines in the eastern French coalfield. Thus Commentry-Fourchambault pursued a policy of integration.

### **The Mining and Metallurgical Industries**

During the first half of the 19th century the iron and steel industry, while being archaic in some respects, achieved satisfactory increases in productivity. However, this success had been achieved through the intensive exploitation of French ores which showed sign of exhaustion by 1860. Fuel was also a problem to French industrialists (Caron, 1979, p. 157). Even when fresh sources were discovered (e.g. in the north of France), they were often difficult and expensive to extract and did not tend to yield top quality coal. Compared to the larger coal reserves of England and Germany, France was in a poor position. The accompanying high price of French coal, imported and home produced, caused higher French steel prices and placed French steelmakers at a disadvantage in international markets (Friedlaender and Oser, 1953, pp. 228-229; Clapham, 1966, pp. 238-239).

Nevertheless, steelmaking continued in France and gained renewed impetus from processes for making steel from the phosphorous-bearing case iron of Lorraine enabling medium-sized factories to produce high quality output. By the 1890s, the Nord region had again become active in the iron and steel industry while the Loire region had moved into metal processing and refined products (Caron, 1979, pp. 158-159). The recovery of the French steel industry (including Fayol's organization) was further aided by the integrated structuring of plants, concentration of control in large organizations increasingly drawing on capital market funds, and a shifting of the base of France industrial activity towards heavy industry (Kemp, 1972, pp. 18-19). By the eve of World War I the French iron and steel industry technically ranked among the best in Europe (Caron, 1979, p. 159).

During World War I, however, the northern and eastern areas of France were enemy-occupied or in the front-line war zone, so that valuable industrial capacity was lost. This gave fresh impetus to such industries as the iron and steel industry in southern regions and encouraged more rapid technological and managerial development as attempts were made to replace losses in the north (Kemp, 1972, p. 14). Fayol's organization would clearly have benefited from this situation.

It is evident that the reported rise in the fortunes of Fayol's organization under his command coincided with the general trend in the fortunes of the metallurgical industry as a whole. When he took over control of the reputedly ailing company, the industry as a whole was experiencing difficulties. Coal prices among other factors rendered French steel uncompetitive internationally and encountered French consumer restraint in an already slow-growing domestic market. Prices and profits were falling generally and northern France became the focal point for mining and metallurgy activities. Later, Fayol's organization grew under his direction, but again this was consistent with a tendency to vertically integrate in the industry. While it is said that Fayol retired in 1918 leaving the company in an "impregnable" position, it must be remembered that the industry as a whole had experienced an upturn since around 1905, and that the War had restored the central and south central French mining and metallurgical industry's importance due to the loss of northern regions to enemy occupation and front-line battles. Thus, a strong case can be mounted for attributing Fayol's success to a combination of his management and the influence of his economic environment rather than solely to his own personal prowess.

### **The Chief Executive**

So-called "self made men" and family firms were prominent among French industry of the 19th century (Palmade, 1972, pp. 156-157). Firms were closely identified with owners and the succeeding generations of the proprietary family. Managers were often drawn from the family or by absorbing them through marriage into the family. With family influence and seniority often playing a greater role in manager selection than skill or aptitude, French industrial management remained conservative and hostile to outside influences and resources which it tended to regard as a threat to family control of the organization. Bankruptcy and takeover were much feared by the family management and only aggravated the conservative nature of management decisions. Indeed young graduates of engineering schools were said to find difficulty in gaining positions in such firms and many consequently turned away from industry, to its own technological and financial disadvantage (Hohenberg, 1968, pp. 124-126).

While old dynasties did survive technological change and changes in regional activity, boards of directors began to replace the old individual "ironmaster." This began to widen the gap between workers and management as personal master-servant relationships disappeared. Nevertheless, there often remained a "director-general" in charge of firm operations and this appointment required technical skill, commercial ability and human management skills (Palmade, 1972, pp. 201-204). This was the role that Henri Fayol came to fulfill at Commentry-Fourchambault.

### **The Environment in Review**

When this sketch of Fayol's industrial and economic environment is reviewed, a number of observations can be made. The

success of his company reflected not just his own personal style of management, but the regional and national industry conditions and trends of his period. Furthermore, his emphasis upon the importance of budgeting and his definition of control reflected the requirements of a manager who had to cope with expensive sources of raw materials, formidable overseas competition and a stagnating home market. Attention to cost control via budgetary-type systems represented a necessary response to such constrained industrial conditions. His anticipation of the Goal Congruence concept via his principles of Unity of Command, Unity of Direction and Subordination of Individual Interest to General Interest also appear likely to have been formed as a result of the integration (both vertical and horizontal) processes which took place during the growth of his organization as well as the "director-general" role which, by management custom of the time, he filled at Commentry-Fourchambault. This would have accustomed him to the notion of corporate goals set by top management and the need to align subordinate goals with them throughout such a large organization.

### **FAYOL IN RETROSPECT**

The foregoing analysis would suggest that while Fayol was clearly a prominent management thinker whose ideas not only maintained their impact upon management writers but also appear to have influenced some accounting writers for many subsequent decades. Yet he was not a unique individual divorced from his surroundings. His managerial success, his administrative principles, his belief in the importance of accounting and budgeting, his definition of control and his anticipation of the Goal Congruence concept reflected his experiences in adapting to the socio-economic environment of his indus-

try. The French steel industry's predicament in international markets and the restricted demand for its output at home would certainly have predisposed managers such as Fayol to emphasize the need to control and restrict costs and to advocate the importance of accounting and finance considerations. His overseeing of a large-scale integrated "combine" would also have prompted his interest in control-associated principles such as authority, command, coordination and discipline, especially in relation to what eventually became a geographically diverse operation such as Commentry-Fourchambault-Decazeville. His anticipation of the Goal Congruence concept reflected both his own "director-general" role and the integration processes which sponsored the growth of his firm.

One further observation should be made concerning Fayol's ideas and their employment by some accounting writers of subsequent generations. While not wishing to suggest that he was a sole influence upon accounting thought in relation to budgeting and the definition of control (although it is contended that he was a major influence upon the later formation of the Goal Congruence concept), it has been argued that his contribution should not be overlooked. However, just as this paper has placed the development of his ideas within their environmental context, so any subsequent evaluation of their current utility in organizational life should be undertaken in context. His concepts appeared appropriate (indeed highly successful) for the size and structure of his organization and the industrial and economic environment within which he worked. It is to a similar structure and environment, in current terms, that his concepts would therefore appear to be most suited. In addition, it appears probable that at least

to a degree, accountants are still employing working definitions and concepts which have not been solely derived from past accounting theory and practice. They may in part reflect early management thought and in turn the management and industrial environment of such early writings. Their present-day suitability for accounting (and management) purposes may therefore be best judged in relation to the degree of similarity between past and present management and industrial environments.

### BIBLIOGRAPHY

- Benninger, L. J., "Accounting Controls: A Tool for Modern Management," *Cost and Management*, Vol. 47, No. 4, July-August, 1973, pp. 20-25.
- Brodie, M. B., *Fayol on Administration*, London, Lyon Grant and Green, 1967.
- Brown, C. L., "The Out Thing, or Oh, What a Dirty Word is Control," *Managerial Planning*, May-June, 1972, pp. 29-32.
- Buckley, A., "Accounting in Organisations," *Accountancy*, Vol. 83, No. 959, July 1973, pp. 62-67.
- Caron, F., *An Economic History of Modern France*, translated by Bray, B., New York, Columbia University Press, 1979.
- Clapham, J. H., *The Economic Development of France and Germany 1815-1914*, 4th edition, London, Cambridge University Press, 1966.
- Committee to Prepare a Statement of Basic Accounting Theory, *A Statement of Basic Accounting Theory*, Evanston, Illinois, American Accounting Association, 1966.
- Davis, R. J., "Administrative Control: As Illustrated by the Hills Brothers Company," *Bulletin of the Taylor Society*, Vol. XVII, No. 1, February 1932, pp. 6-17.
- Fayol, H., *General and Industrial Management*, London, Sir Isaac Pitman & Sons, 1949. (First published in French as "Administration Industrielle et Generale-Prevoyance, Organisation, Commandement, Co-ordination, Controle," Bulletin de la Societe de l'Industrie Minerale, 1916.)
- Friedlaender, H. E. and Oser, J., *Economic History of Modern Europe*, New York, Prentice-Hall, 1953.
- George, C. S. Jr., *The History of Management Thought*, 2nd edition, Englewood Cliffs, New Jersey, Prentice-Hall, 1972.

- Gulick, L., "Notes on the Theory of Organization," (presented 1936), in Gulick, L. and Urwick, L. (eds.), *Papers on the Science of Administration*, New York, Institute of Public Administration, 1937, pp. 3-45.
- Hawkins, J., "Budgeting in Industry," *The Cost Accountant*, Vol. 14, No. 8, January 1935, pp. 271-277.
- Hofstede, G. H., *The Game of Budget Control*, London, Tavistock Publications, 1968.
- Hohenberg, P., *A Primer on the Economic History of Europe*, New York, Random House, 1968.
- Horngren, C. T., "Motivation and Coordination in Management Control Systems," *Management Accounting*, Vol. XLVIII, No. 9, May 1967, pp. 3-7.
- Jaedicke, R. K., "Accounting Data for Purposes of Control," *The Accounting Review*, Vol. 37, No. 2, April 1962, pp. 181-188.
- Kemp, T., *The French Economy 1913-1939: The History of a Decline*, London, Longman, 1972.
- Massie, J. L., "Management Theory," in March, J. G. (ed.), *Handbook of Organizations*, Chicago, Rand McNally and Co., 1965, pp. 387-421.
- Palmade, G. P., *French Capitalism in the Nineteenth Century* (1961), translated by Holmes, G. M., Newton Abbot, Devon, David & Charles, 1972.
- Parker, L. D., "Goal Congruence: A Misguided Accounting Concept," *Abacus*, Vol. 12, No. 1, June 1976, pp. 3-13.
- Parker, L. D., "Divisional Performance Measurement: Beyond An Exclusive Profit Test," *Accounting and Business Research*, No. 36, Autumn 1979, pp. 309-319.
- Pearson, N. M., "Public Administration: Fayolism as the Necessary Complement of Taylorism," *The American Political Science Review*, Vol. 39, No. 1, February 1945, pp. 68-85.
- Searfoss, D. G., "Some Behavioral Aspects of Budgeting for Control: An Empirical Study," *Accounting, Organizations and Society*, Vol. 1, No. 4, 1976, pp. 375-385.
- Sizer, J., "Budget Planning and Control," *Accountancy*, Vol. 86, No. 978, February 1975, pp. 78-81.
- Stedry, A. C., *Budget Control and Cost Behavior*, Englewood Cliffs, New Jersey, Prentice-Hall, 1960.
- Theiss, E. L., "Budgetary Procedure as a Means of Administrative Control," *The Accounting Review*, Vol. 7, No. 1, March 1932, pp. 11-21.
- Theiss, E. L., "Accounting and Budgeting," *The Accounting Review*, Vol. 10, No. 2, June 1935, pp. 157-161.
- Urwick, L. F. (ed.), *The Golden book of Management: A Historical Period of the Life and Work of Seventy Pioneers*, London, Newman Neame Ltd., 1956.
- Urwick, L. and Brech, E. F. L., *The Making of Scientific Management, Volume I, Thirteen Pioneers*, London, Sir Isaac Pitman and Sons Ltd., reprinted 1951, 1955.
- Vancil, R. F., "What Kind of Management Control Do You Need?," *Harvard Business Review*, Vol. 51, No. 2, March-April 1973, pp. 75-86.
- Welsch, G. A., "Some Behavioral Implications in Profit Planning and Control," *Management Adviser*, Vol. 8, No. 4, July-August 1971, pp. 21-27.
- Welsch, G. A., *Budgeting: Profit Planning and Control*, 4th edition, Englewood Cliffs, New Jersey, Prentice-Hall, 1976.
- Wren, D. A., *The Evolution of Management Thought*, New York, John Wiley & Sons, 2nd edition, 1979.

<sup>1</sup>Awards and Prizes:

- The Delesse Prize of the Academy of Sciences.  
 The Gold Medal of the Société d'Encouragement pour l'Industrie Nationale.  
 The Gold Medal and Medal of Honour of the Société de l'Industrie Minérale.  
 Chevalier of the Legion of Honour, 1888.  
 Officer, the Legion of Hour, 1913.  
 Commander, the Order of the Crown of Roumania, 1925.

<sup>2</sup>This was subsequently reproduced in book form by Dunod of Paris in 1925 and was translated into English by the International Management Institute in Geneva in 1929. It was virtually ignored in the USA until it was published there in 1949, while its ideas had achieved wide currency in Europe long before (Urwick and Brech, 1951, pp. 39, 44-45; George, 1968, pp. 105-107). However it is interesting to note that between 1949 and 1965, his book was reprinted 6 times in the English language.

<sup>3</sup>75 texts held in the library of the London School of Economics were examined.

<sup>4</sup>In particular, budgetary control systems.