

### **'SOCIÉTÉ SÉRICICOLE DE LA GRÈCE': ADAPTATION AND ASSIMILATION OF A LARGE INDUSTRIAL FIRM**

If the uniqueness of the components of the history of each individual enterprise makes it difficult to standardize and incorporate them in paradigms of universal value, the history of the Athens silkmill is an especially atypical case which, at first glance, offers very little for detecting the norms of Greek industrialization. This early firm represents a sizeable investment by Greek and foreign capital, made in the form of a limited joint-stock company, in the capital city of the realm and oriented towards exports: all these are elements that differentiate it considerably from the typical Greek industrial unit in the nineteenth century, that is the small, personal-family firm or simple partnership business, set up in the main ports and mainly developed in response to the demands of the home market.

Nevertheless the Société Séricicole can contribute to our understanding of the forms taken by industrialization in Greece: the atypicality of the original, somewhat 'static' form is counterbalanced by the dynamic of its adaptation, that enhances the receptive conditions, the structural traits of the milieu, which have a generalizing value. If the Athens silkmill did not constitute the representative precursory specimen of Greek industry in its original form, it was in time transformed, gradually taking on those characteristics that dominated the morphology of the typical Greek firm. The dynamic of its development is the result of tensions emanating from diverse internal and external factors in relation to the business, and maps the field in which the unique, the individual is answered by the general and the social. The firm's relations with the markets, the way it accumulates its capital, the business behaviour its management unfetters, its import and assimilation of industrial techniques, its installation in the urban web, are all issues to be studied. For even though they do not appear here in typical form, they nevertheless delimit the field of potential options this attempt to establish an industrial firm encountered in Greece.

#### **The beginnings**

The founding of the silkmill at Athens was the outcome of wider tendencies that appeared in silkworking at an international level and which led Western European businesses close to those lands where their raw material was produced. From the 1830s, British, French and Italian entrepreneurs had begun to found silk-reeling factories in Bursa and Smyrna,



**1. The bronze seal of the 'Société Séricicole' (in French). 2 x 4 cm. (Chr. Zioulas Collection).**

in Salonika, Cyprus and the Lebanon.<sup>1</sup> The reasons for these moves have been analysed repeatedly elsewhere and do not concern us here. What is important is that the enterprise is the result of initiatives and prospects that went beyond the boundaries of Greek economic space and from the outset the silkmill was included in the international network of transactions and economic relations, thus bearing witness to the early incorporation of the Greek economy in the world economy.

The relevant initiative was taken by 'Augustus Wrampe & Co.' of London, a firm about which very little is known. In 1852 the Wrampe company purchased the half-finished shopping centre of G. Cantacuzenos and turned it into a silkmill.<sup>2</sup> On 4 January 1853 Augustus Wrampe signed, in the presence of the Athenian solicitor D.K. Soutzos, the statutes of a new joint-stock company ('*en commandite*') to be known as the 'Greek Silk Company' 'August Wrampe & Co.'<sup>3</sup> It had 500,000 francs (or 20,000 pounds sterling) nominal capital in 500 one-thousand franc (40 pounds sterling) shares, a ten-year duration and headquarters in Athens. 'A. Wrampe & Co.' kept the direction-management of this new company and one-fifth of the capital, that is 100 shares. Albrecht Witte was appointed its agent in Athens and managing director of the silkmill. The managing company would hold on its behalf half the net profits, while the other half would be shared as dividend to the shareholders. The net profit, however, was reckoned after subtracting from the gross profit 5% of the value of the shares that would be paid annually to the shareholders. This detail is of some significance because, as we shall see, no distinction was made between interest and dividend in the statutes of the Greek Société Séricicole.

According to its statutes, Wrampe & Co. transferred to the new company 'all the field, the buildings of the plant in Athens together with the steam-engines and the other materials and tools' (article 12), which statement indicates that the conversion of the premises into a silkmill had begun with the signing of the contract, but had perhaps not been completed. The whole was valued at 225,000 francs, that is 225 1,000-drachma shares, of which 'Wrampe & Co.' were entitled to make 125 available to third parties. In other words, 'Wrampe & Co.' intended to accumulate 400,000 francs from the issue and transfer of shares.

It is extremely doubtful whether these statutes were implemented and whether the 'Greek Silk Company' ever acquired flesh and bones, because in all subsequent documents 'A. Wrampe & Co.' is cited as owner of the silkmill, with headquarters in London. Indeed, perhaps the inability of Wrampe & Co. to dispose of its shares was the basic cause of its insolvency. It is not possible here to specify the reasons for this inability. It may be assumed that in a period when the boom of the British economy had just begun, with the discovery of gold in California and Australia, the burgeoning of mining exports and of railway enterprises, there would have been no special interest

1. A. Gaudry, *Recherches scientifiques en Orient*, Imprimerie Impériale, Paris 1855.

2. See here Aristea Papanicolaou-Christensen, *The Athens Silkmill*.

3. *Statutes of the Joint Stock Company 'en commandite' formed for the object of promoting the production of silk in Greece...*, Charles Skipper and East, St. Dunstan's Hill, n.d. The statutes are dated 4 January 1853 (Athens).

in a business that was traditional by British standards. Moreover, the subsequent transfer of the Silk Company from British to French interests perhaps speaks precisely the relative 'backwardness' of the French economy.

Whatever the case, some preliminary works must have commenced in the Athens silkmill when, in June 1853, Witte informed the well-known merchant and rentier in Piraeus, Nikolaos Meletopoulos 'to stop supplying cocoons' and ceased payments to him.<sup>4</sup> From then on the person who stepped in as protagonist in the firm's developments was the French industrialist and engineer Louis Roeck, who must have been Wrampe's number one creditor: his company ('Louis Roeck & Cie.') in Lyons had supplied the equipment for the silkmill and he had personally supervised its installation. Roeck resorted to the Greek courts and secured a first ruling in September 1853, from which it emerges that Wrampe owed him a total of 49,572 francs (without interest), perhaps the cost of the machinery.<sup>5</sup> This was followed on 22 September by the compulsory confiscation of the premises, that was announced to another twelve creditors, while at the beginning of October the first 'notification' of auction was posted.<sup>6</sup> In the meantime, after what seems to have been an independent court case brought by Meletopoulos in early November, for debts incurred by Witte to the sum of 10,000 drachmas, the Wrampe company was declared bankrupt.

The auction eventually took place nine months later, on 11 July 1854. In the interim period Louis Roeck must have taken moves to ensure the succession. Whether he already knew the Durutti brothers, either from Constantine's previous silkmill or from Athanasios's short sojourn in France, is not known. However, it would not have been difficult to approach the family that had introduced the most modern silk-reeling mill in Greece. Two of the people with whom he must have come into contact, Otto Gropius and Loukas Rallis, had close connections with silkworking.<sup>7</sup> The Athenian solicitor Demetrios K. Soutzos, who also became a shareholder in the Greek Société Séricicole, must have played some role in facilitating Roeck's contacts, as did the lawyers Michael Potlis, who was appointed treasurer of the Wrampe bankruptcy, and George Vellios, who frequently appeared as Roeck's representative and interpreter, since his client evidently knew very little Greek.<sup>8</sup>

The succession was ready in July 1854, when the silkmill was auctioned. The value of the premises (plot 9,421 square cubits, buildings and machines) had been assessed at 250,000 drachmas by the mayoral adjunct S. Georgoulis, and the value of the adjacent orchard at 3,000 drachmas, while the starting bids were fixed at 50,000 and 1,000 drachmas respectively. Apart from Roeck, the only other bidders were Nikolaos Pilikias and Themistocles Karadimas, who were interested in the orchard, whereas there was only one counter-bid (80,000 drachmas) for the silkmill, from the lawyer Leonidas Goutas.<sup>9</sup> In the

4. Excerpt from the announcement of the 'Wrampe' bankruptcy, in the newspaper *Αιών*, 9.1.1854.

5. All this information and that which follows is from the notarial act no. 2132/11.7.1854, of D.K. Soutzos, solicitor at Athens: 'Auction report for the silk-reeling mill and the garden opposite' (Athens Records Office of the Association of Notaries), henceforth: Auction report 1854. The decision of the Court of the First Instance (no. 427) is dated 7 and 9 September 1853. I am very grateful to Mr Georgios Konstas for his considerable assistance during my research in the Records Office.

6. The notice was published in the newspaper *Αθήνα*, 2.10.1853. The mortgage creditors are mentioned by name in the Auction report 1854, but it is not clear whether these concern mortgages on the property from before or creditors of 'Wrampe & Co.'. The names given are: Ioannis Bucherer, Georgios Pla[k]a, Heinrich Scheiberling, Pavlos Skouloudis, Antonios Michalinoudis, Loukas Rallis, Iakovos Sarochivis, Odysseas Salsas, Edward Reinigge, Nikitias Lambrinidis, Georgios Katopis and 'Fredholm in Marseilles'. Apart from the last, the others are mentioned as resident in Athens. Scheiberling and Reinigge were Bavarian carpenters-cabinet makers settled in Athens and had probably worked on the construction of the silkmill (see Christiana Luth, *Στρώ Αθήνα του 1847-48* [In Athens 1847-48] (translated and edited by Aristeia Papanicolaou-Christensen), Athens 1991, 33, 53, 71, 83-84 etc.). If all the above were creditors of 'Wrampe & Co.', then one can assume that after buying the premises this firm had no money to function in Greece, but used this property as surety for advancing local capital.

7. Georgios Gropius was one of the earliest owners of part of the silkmill plot, while Otto Gropius was the person who had 'at one time' let rooms in the Cantacuzenos residence to Christian Siegel, see here Aristeia Papanicolaou-Christensen op. cit., and contract no. 1226/31.12.1853 of D.K. Soutzou between Augustus Wrampe and Chr. Siegel (Records Office, Athens). Otto Gropius is known to have tried to set up a silkmill at Nauplion, in 1845. Loukas Rallis, owner of the Piraeus silkmill (1844), appears among the 'mortgage creditors' of 'Wrampe & Co.' (see n. 6).

8. On Potlis's role, see submission of auction proceedings, dated 29.12.1854, by the notary Pan. Poulos, attached to the Auction report 1854. M. Potlis (1810-1863) became a university professor in 1855 and later served as the University parliamentary deputy (1861-1862). G. Vellios was present at the signing of the founding contract of the Société Séricicole, as Roeck's 'interpreter'. The role of the circle of solicitors and lawyers in the economic life of Greece still awaits study. It is more or less certain that during the early decades of the new state, when there was a glut of court cases as a result of the necessary adaptation of customary law to the legislation of the new state, those in the legal professions in the urban centres, and above all in the capital, were among the first to amass fortunes, which must have been disbursed in business activities in various ways. This situation is also evident in the history of the Société Séricicole. On analogous issues see P. Mathias, The lawyer as businessman in 18th c. England, in D.C. Coleman - P. Mathias, *Enterprise and History: Essays in Honour of Charles Wilson*, Cambridge University Press, 1984, 151-167.

9. Themistokles Karadimas or Kostadimas appears in the contract 1226/31.12.1853 of D.K. Soutzos as the earliest owner of the orchard. In all probability Nikolaos Pilikias was brother of the well-known Professor of Criminal Law, parliamentary deputy and Minister of Justice, Spyridon Pilikias, a lawyer himself and board member of the National Bank, see *Απομνημονεύματα της υπηρεσίας Σπυρίδωνος Πηλιά... [Memoirs of Spyridon Pilikias's Ministry...]*, published by Ioannis N. Pilikias, Athens 1893, 6.



end both properties were hammered down to L. Roeck, at 100,000 drachmas for the silkmill and 6,000 drachmas for the orchard.

A few days later, on 23 July 1854, after compensation of Wrampe's remaining creditors had been regulated,<sup>10</sup> Roeck made over six-eighths of the ownership of the silkmill to the six new shareholders of the Société Séricicole.<sup>11</sup> The overall value of the properties was determined as 120,000 drachmas. Of the 90,000 drachmas, the price of the transfer, the six contracting with Roeck undertook to deposit 60,000 drachmas to the receiver of the Wrampe bankruptcy and to pay Roeck himself the remaining 30,000 drachmas, since he was finishing construction work on the complex within forty days. This included completing the wall round the compound, a marble staircase, the entrance portal, water-tanks, wells and chimney stacks. With the same agreement the contractors committed themselves to setting up a stock company with 152,000 drachmas starting capital, which would be doubled by issuing new shares.

So Roeck did not contribute a single drachma to the purchase of the silkmill: the balance of the sale at auction, 46,000 drachmas, approximately equalled Wrampe's old debt, most of which Roeck converted into capital as his participation in the new company, while also securing the payment of another 30,000 drachmas for completion of the building works. Roeck succeeded in doing that which Wrampe & Co. had failed to do: in transferring the company to Greek hands. On their side, the Greek shareholders bought for 90,000 drachmas the greater part of a premises actually worth about 250,000 drachmas (consequently 187,500 drachmas for the sixth-eighths) and acquired shares of nominal value 1,000 drachmas by paying in reality 788 drachmas.

### 'Société Séricicole de la Grèce'. Individuals and institutions

The statutes of the Société Séricicole were signed in Athens on 6 August 1854, in the home of Michael Iatros, in Ermou street.<sup>12</sup> In addition to L. Roeck, the six Greek shareholders were Athanasios G. Durutti, Constantine G. Durutti, Michael Iatros, Panayotis Papiolakis, Ioannis K. Tsatsos and Demetrios S. Mavrokordatos, all merchants except the last. The new firm retained the form of the previous British company: it was a joint-stock company (*société en commandite par actions*) with managing director, which post was assumed by Athanasios Durutti, who had sole responsibility for the course of the business. It also kept the title-type of the first company: 'Société Séricicole de la Grèce "Athanasios Durutti & Cie."'. Its duration was fixed at ten years and its starting capital at 152,000 drachmas, or 152 1,000-drachma shares, representing the value of the real estate property. Roeck retained two-eighths of this capital (38 shares) and the remaining six shareholders received one-eighth or 19 shares each. The company was to issue immediately another 152 shares, which, if not disposed of to third parties, the shareholders were

10. In a subsequent testimony A. Durutti refers to a document dated 17 July 1854 (not found), which must concern the transfer to Roeck of the rights of the rest of the creditors to the auction proceeds. One of these creditors was Chr.E. Siegel, who was to bother the Société Séricicole for years, suing for the application of agreements that had remained pending with the bankruptcy of 'Wrampe & Co.'. See in connection, Chr. Zioulas Collection, 'Charges of Athanasios Durutti & Co. against Chr.E. Sigel, L. Roeck and Ami Thiebau before the Court of the First Instance at Athens', 9 March 1866, and Aristeia Papanicolaou-Christensen, op. cit. On the redemption of the mortgages, there is a certified statement from the Records Office, dated 3.7.1856, in the Chr. Zioulas Collection. (I here thank Mr Chr. Zioulas for the archival material he made available for study).

11. Contract 2181/23.7.1854 P. Poulos (Records Office, Athens).

12. Contract 2245/6.8.1854 P. Poulos (Records Office, Athens) and copy in the Chr. Zioulas Collection. The statutes were also published in the pamphlet *Σημερινή Εταιρεία της Ελλάδος υπό την επωνυμία Αθανάσιος Γ. Δουρuti & Σία εν Αθήναις* [Société Séricicole de la Grèce 'Athanasios Durutti & Cie' in Athens], Athens 1854.



obliged to buy in the same ratio as their initial participation. The statutes made a clear distinction between the original 152 shares 'of ownership', which were personal and ensured rights over the ownership of the property, and the new shares which were anonymous (article 7). This distinction, which did not exist in the statutes of the British firm, considerably complicated the accumulation of capital by the Société Séricicole, as we shall see, and certainly attests some special sensitivity to the issue of ownership. In any case the statutes also declared that when the ten years expired, the owners of the 152 personal shares had the right to re-assume ownership of the premises (article 8).

There were some other interesting differences between the two statutes. In the case of the Société Séricicole the remuneration of the managing director was not half the net profits but a specific sum, 6,000 drachmas a year (article 20), while he was also entitled to an additional 6% of the net profits, calculated after subtraction of his salary (article 18). There is no mention in the Société Séricicole's statutes of the compulsory payment of 5% interest from the gross profits on the shares, but simply of the payment of dividend, providing there was a net profit (article 23). On the contrary, in the case of the Société Séricicole the annual deduction of 2% of the value of the 152 personal shares was compulsory 'for the damage to the premises during the year' (article 18), a sum which the original shareholders would have taken at the end of the decade or during the dissolution of the company (article 8) and which in a way corresponds to the concept of depreciation, though this is not stated explicitly in either of the two sets of statutes. Lastly, the concept of reserve capital, which does not exist in the British firm's statutes appears marginally in those of the Greek successor: provided the apportionable (net) profit exceeds 12% of the capital, 'the excess will be saved as reserve capital' – but this up to a limit of 25% of the capital: the surplus is apportioned [...] as dividend' (article 24).

It is apparent from the above that the shareholders in the Société Séricicole rather preferred the security of ownership to the guaranteed annual return on their capital; that Athanasios Durutti preferred the steady annual remuneration to the unpredictability of the percentage of the net profits; and lastly, that the concepts of depreciation and reserve capital –concepts fundamental to the correct management of an industrial enterprise– were not clearly formulated in the consciousness of the shareholders in the Société Séricicole, Greek and foreign.

### The persons

The small circle of the original shareholders of the Société Séricicole encompassed local dignitaries, expatriate merchants and Phanariote capitalists, all eminent members of Athenian society. Without doubt the central nucleus of the new firm was the Durutti family (the two brothers and Athanasios's father–

13. Athanasios and his wife Florentia, daughter of Michael Iatros, lived in her father's house in Athens. See article by Maria Christina Chatzioannou in this volume. Biographical information on Iatros in K. K. Σπυλιωτάκης, *Αρχαίον Μιχαήλ Ιατρού* [K. K. Spiliotakis, Michael Iatros Archive], *Τετράδια Εργασίας ΚΝΕ/ΕΙΕ* no. 6 (1983). Despite damage suffered by the Iatros Archive, the distribution of the letters Iatros received (according to Spiliotakis's catalogue) can be taken as an indirect index of the intensity of his entrepreneurial activities: 335 in the decade 1831-40, 359 in the decade 1841-50, 206 in the decade 1851-60 and 140 between 1861 and 1863, the year of his death.

14. Michael Iatros Archive, I.N.R./N.H.R.F. (henceforth: MIA), vol. VIII, two letters from P. Papiolakis to Iatros, dated 17 May and 7 July 1849. The collaboration concerned the pre-purchase of silk from Sparta, for export to Marseilles on behalf of the Tzitzinia Brothers. Although Papiolakis's letters reveal his respect for and loyalty to Iatros ('Please order me freely so that I can prove to you who I am always...'), he also appears to have had some independence: he communicated directly with the Tzitzinia in Marseilles and Constantinople, while preparing to set up his own business enterprise (in the second letter, the 'newly established company "Kapoudas, Papiolakis & Cia." is mentioned). On his possible relations with Trieste, see Ολγα Κατσιαρδί-Ηερινγκ, *Η ελληνική παροιμία της Τεργέστης (1751-1830)* [Olga Katsiardi-Hering, *The Greek community of Trieste (1751-1830)*], vol. 2, Athens 1984, 645, where Georgios and Konstantinos Papiolakis acquired navigation permits for their own ships in 1784 and 1824 respectively.

15. Μαρία Χρυστίνα Χατζηγιάννου, *Η τύχη των πρώτων Ιταλών μεταβουρνητών στο ελληνικό κράτος* [Maria Christina Chatziioannou, *The fate of the first Italian silk-reelers in the Greek state*], *Μνήμων* 13 (1991), 133.

16. Ioannis's father, Konstantinos I. Tsatsos (or Tzatzios-Tzatzios), took part in the National Assemblies at Epidaurus (1826) and Argos (1829) as plenipotentiary for Karpensis, and about this time he settled in Nauplion as a merchant. See Α. Μάμουκα, *Τα κατά την Αναγέννηση της Ελλάδος* [A. Mamouka, *Events during the Renaissance of Greece*], vol. IV, Piraeus 1839, 53, 100, 107 and vol. XI, Athens 1852, 1; *Πανελλήνιον Λεξικόν Εθνικής Εξατοναετηρίδος* [Panhellenic National Centennial Album], vol. II, Athens 1925, 333. Ioannis (Karpensis) 1817 - Athens (1895) succeeded his father as a young man, after attending primary school on Andros and high school on Aegina. He travelled in Europe, modernized the family business and in 1850 settled in Athens. Shortly before 1854 he married Athena A. Rosetou, of the well-known Phanariote family (see B. Σφινροέρης, *Οι δραγμανοί του στόλου* [V. Sfirouras, *The dragomans of the fleet*], Athens 1965, 117-119), daughter of Konstantinos Rosetos and maternal granddaughter of the wealthy Constantinopolitan merchant in London, Constantine Ionidis. This information is from the family tomb, see Ελένη Τσουγκλίδου-Αγγελολιάδη, Δέσποινα Τσουγκλίδου-Πέννα, *Μηρόκος Α' Νεκροταφείο Αθηνών, Α' Ζώνη* [Eleni Tsoungaraki-Angelomati, Despoina Tsouklidou-Penna, *Register of 1st Cemetery Athens, Zone I-Section 1*], Athens 1972, 81-83, and M.-D. Sturdza, *Dictionnaire historique et genealogique des grandes familles de Grèce, d'Albanie et de Constantinople*, Paris 1983, 403 (s.v. Rosetti). Sturdza cites Ioannis Rosetti as father of Athanasios Rosetti, even though he has consulted the study by Tsoungaraki - Tsouklidou. (Thanks are due to my colleague Florin Marinescu for his help in the maze of genealogical sources). I. Tsatsos served several terms as a member of the Commission for the Animation of National Industry. His grandson was the former President of the Hellenic Republic, Konstantinos Tsatsos.

17. An uncle of Demetrios, Konstantinos G. Mavrokordatos (1789-1842), had married Luxandra, daughter of Konstantinos Rosetos, in Bucharest, see Sturdza, op. cit., 403. Owing to some confusions in Sturdza's study, the degrees of affinity are uncertain.

in-law, Michael Iatros). The last, a wealthy Peloponnesian merchant-banker, land-owner and politician, was undoubtedly the Durutti brothers' basic mainstay while first settling in Greece. Nevertheless, he was not present in person at the signing of the contract and his participation in the Athens silkmill must not have been particularly active, other than his financial contribution and, of course, his status, contacts and the more general social support his presence ensured. About seventy-five years old at the time, Iatros spent most of the year in Nauplion and his activities had naturally begun to decline.<sup>13</sup>

Panayotis Papiolakis can also be included in the Durutti circle. His close collaboration with Athanasios Durutti in Athens, as well as with M. Iatros in Nauplion, is attested from at least 1849, while an earlier contact of both families in Trieste is possible.<sup>14</sup> However, his participation in the Société Séricicole was short-lived; from the following year, 1855, Papiolakis ceased attending the company's general meetings and seems to have transferred his portion to A. Pappadakis. It is not impossible that this withdrawal – or final independence – was the result of an estrangement with the Durutti brothers: a little later, in 1859, P. Papiolakis founded his own small, steam-powered silkmill at Piraeus, a venture which, however, did not last long.<sup>15</sup>

A second circle was formed around the person of Ioannis K. Tsatsos, a circle tangential to the Phanariote aristocracy and Hellenism in the Danubian principalities. Scion of a leading family in Eurytania and a successful merchant in Athens, I. Tsatsos had lived in Nauplion for many years, where M. Iatros had surely made his acquaintance.<sup>16</sup> Through his wife, Athena Rosetou, Tsatsos had contacts with Phanariote circles: so it was probably he who 'brought' the only non-merchant shareholder into the Société Séricicole, Demetrios S. Mavrokordatos ('Doctor of Laws' as he is characterized in the founding contract), to whom he may have been distantly related.<sup>17</sup> Mavrokordatos,<sup>18</sup> who had studied Law in Paris and was destined to become a judge, university professor and government minister, was the youngest and most intellectual member of the group of shareholders, the person who addressed the salutation to Otto when the king visited the silkmill in January 1855.<sup>19</sup> In all probability the later collaboration of A.Ph. Pappadakis with the Société Séricicole was due to this second circle of shareholders.

As the composition of the group of original shareholders reveals, the Société Séricicole was founded essentially on Greek businessmen: the initiative of foreign investors did not meet with response only from progressive literati or other bourgeois rentiers, as had happened fifteen years earlier with the Royal Sugar Refinery, the first experience of an industrial company in Greece.<sup>20</sup> It was more smoothly incorporated in the Greek business world, which fact is confirmed by the widening of the group, which will be discussed below, a world that was certainly more mature and more amenable to new companies and the risk of industrial investment. However, though the incorporation was smoother, it was neither *en masse* nor



enthusiastic. From the outset the Société Séricole was organized essentially around one family and probably had difficulty in placing the new shares, which do not seem to have passed beyond the circle of businessmen associated with the silk trade: the acceptability was due to the special mobility that characterized the silk-reeling sector during the 1850s and not to some deeper readiness of the entrepreneurial world for industrial projects. They were, moreover, not fortuitous members of this world: most of them were persons with wider social and political influence, that transcended the strict bounds of the economic sphere.

### The widening of the group

The statutes of the Société Séricole stipulated that the 152 new shares should be made available by 1 January 1855 (article 9). The extension of the

TABLE 1  
THE SHAREHOLDERS OF THE SOCIÉTÉ SÉRICOLE

Name	Contract 6.8.1854	G.M. 24.5.55	G.M. 15.3.56	G.M. 8.8.57	G.M. 31.7.59	G.M. 21.1.60	G.M. 21.1.62
A.G. Durutti	19	32	32	32	32	32	32
M. Iatros	19*	32*	32*	32*	32*	32	32*
I.K. Tsatsos	19	32	32	32*	32	32	32
D. Mavrokordatos	19	32	32	32	32	32*	32*
P. Papiolakis	19	-	-	-	-	-	-
A.Ph. Pappadakis	-	40	40	40	40	40	40
L. Roeck	38	76	76	71	19*	19*	19*
Frères Souchon	-	-	-	-	33*	-	33*
A.Thiebaud	-	-	-	-	-	19*	19*
K.G. Durutti	19	24	24	42	24	24	24*
N. Morozinis	-	-	-	-	-	10*	10*
S. Alexandrakis	-	-	-	-	-	2*	-
A. Papatheodorou	-	-	-	-	-	1*	-
S.S. Askolis	-	-	-	-	-	-	-
Call. Papadoukas	-	-	-	-	-	-	-
I. Chatzipetros	-	5	5	-	-	5	5
Alexios Pallis	-	4	4	-	-	4	4
Chr.I. Paramythiotis	-	-	6	6	-	6*	6*
Dem.K. Soutzos/ Kon.D. Soutzos	-	-	-	-	6	5	5
A. Liberopoulos	-	-	-	-	-	2*	2*
Represented shares	152	277	283	287	250	265	295

\* Shareholders represented by proxy at the General Meetings are marked with an asterisk, and those neither present nor represented with a hyphen. The shares entered for L.Roeck and C. Durutti in 1857 correspond to the total they represented.

18. Descendant (4th generation) of the Voevod of Moldavia, Nikolaos Mavrokordatos, son of Stephanos Mavrokordatos and Aikaterini Schina, Demetrios was born in Bessarabia in 1821 and had completed his legal studies in Paris by 1847 (see Sturdza, op. cit., 235 and D.E. Maurocordatos, *Thèse pour la licence*, Faculté de Droit de Paris, Paris 1847). He served as a judge in Athens, later as a university professor and for a short spell as Foreign Minister in the first government after the expulsion of King Otto (1863), while his activity as an author attests a wide range of interests, among which economic issues are prominent. Apart from his legal texts (Δημ. Στ. Μαυροκορδάτου, *Δοκίμιον ιστορικών περί της Ρωσικής Νομοθεσίας από των αρχαιοτάτων αχρι των καθ' ημας χρόνων* [D. St. Mavrokordatos, Historical Essay on Russian Legislation from most ancient times to our day], Athens 1857), Mavrokordatos wrote a series of articles on banking questions in the newspaper *Κλειώ* in Trieste, which were also published in a book (*Επιστολαί εκ Γερμανίας περί πιστωτικών τραπεζών του λαού* [Letters from Germany on credit banks of the people], Leipzig 1869), while he was also concerned with educational issues (*Υπομνημάτων περί εκπαίδευσεως του λαού* [Note on the education of the people], Athens 1872). He was a member of the committee of the Parnassos Society, which in 1872 founded a school for indigent children, see in connection M. Λάμπρου, *Απόρων παιδων βίος και ήθη* [M. Lambrou, Life and habits of pauper children] (reprint from the 13th volume of *Παρουσία*, Athens 1890, 2).

19. See in connection *Αθήνα* 28.1.1855.



20. On the Greek shareholders in the Royal Sugar Refinery, see A. Παργαβίης, *Απομνημονεύματα* [A. Rangavis, Memoirs], vol. 2, Athens 1895, 123ff.

21. *Σηροκή Εταιρεία* [Société Séricole], op. cit., 11.

22. All the information on the distribution of shares is from certain loose documents preserved in the Chr. Zioulas Collection. The first document consists of three sheets that seem to come from the book of minutes of the Company's meetings (now lost); the first sheet is titled (in Greek) 'Minutes of the Meetings of the Société Séricole de la Grèce' and the whole contains the minutes of the first meeting (24.6.1855) and part of the second (15.3.1856). The remaining documents are copies of the minutes of the meetings on 8.8.1857, 31.7.1859, 24.1.1860 and 21.1.1862, all bear a confirmation signed by A. Durutti (dated 29.9.1861 for the first three and 31.1.1862 for the last) that they are 'exact copies of the original in the Minutes of the Société Séricole de la Grèce', while from other notes and addenda it seems that they were made and used for judicial purposes. Henceforth, all references to these documents are in the form: Minutes of Meeting... [date].

23. This is how Rhea Galanaki imagined him in her novel *Ο Βίος του Ισμαήλ Φερή Παρά* [The life of Ishmail Ferik Pasha] Athens 1989, 27, shouting his name when bidding his brother farewell. A.F. Pappadakis was born at Psychro, Lasithi in 1816 and after the famous adventure of his kidnapping and captivity in Constantinople, escaped to Odessa. There he met Alexandros Sturdza, who paid for his studies as an agronomer and appointed him steward of his estate. In Athens he became an active member of the Central Pro-Cretan Committee. On his death (1878) Pappadakis bequeathed the greater part of his fortune to the University of Athens. See N.M.

Δαμάκι, *Λόγος εκφωνηθείς κατά το μνημόσυνο του αοιδίμου Αντωνίου Φ. Παπαδάκη* [N. Damala, Speech delivered at the memorial service for the late Antonios Ph. Pappadakis], Athens 1879, and Π. Κριάρης, *Ιστορία της Κρήτης...* [P. Kriari, History of Crete...], vol. III, Chania 1937 (1st ed. 1902), 410-411 (I am most grateful to Stratis Boumazos for directing me to these sources). See also Τσουγκράκη-Τσουζιλίδου, op. cit., 79-80 (tomb of Calliope G. Kambani). Pappadakis was also one of the shareholders in the Greek Steamship Company, signing up for ten 500-dr shares in 1856 (see K.

Παπαθανασίου, *Συμβολή στην ιστορία της Ελληνικής Ατμοπλοΐας* (1849-1857) [K.

Papathanasopoulos, Contribution to the history of Greek Steam-shipping (1849-1857)], *Μνήμων*, 12 (1985), 184). In 1857 he and Constantine Durutti participated in the group of entrepreneurs - S. Sinas, Eleni M. Tositza et alii - who proposed to construct the Athens-Piraeus railway (which was undertaken by Feraldi in the end); see *Τα περί του ατ' Αθηνών εις Πειραιά σιδηροδρόμου* [Concerning the railway from Athens to Piraeus], Athens 1858.

24. Morozini's correspondence with M. Iatros was considerable in the period 1838-1846 (See K. Σπηλιωτόση, op. cit.). It is to be found in the catalogues of Olga Katsiardi-Hering, op. cit., 631, 644 and 654.

25. His letters in the MIA, vol. VIII (1849). Spyridon Alexandrakis (1807-1871), who originated from Kampos Avia, developed into one of the leading merchants in Kalamata, after first working as a clerk for a flour merchant until 1836. Through his bequests he was also an important benefactor of both Kalamata (Alexandrakeion Hospital, Poor House etc) and his birthplace (Greek School at Kampos Avia). Biographical details in Μίμης Ηλ. Φερέτος, *Μεσογειακά* 1968 [M.H. Feretos, *Mesiniaka* 1968], vol. I, Athens 1968, 543-546, and N. Καρύωτης, *Μεσογειακό βιογραφικό λεξικό* [N. Karambelas, *Meseniian biographical dictionary*], Kalamata 1962, 22-23.

deadline by three months, granted on 28 December 1854, was probably not due entirely to the anomalous circumstances prevailing in Athens and Piraeus during the second semester of 1854, with the blockade of Piraeus and the cholera epidemic in Athens, as the relevant announcement by the company states.<sup>21</sup> Because, even though the majority of the new shares had been placed in June 1855, when the first general meeting of the Société was held, they had to a large degree been bought by the original shareholders themselves (see Table 1). Roeck doubled his initial share; four of the five Greek founders took 13 new shares, while Constantine Durutti just 5. Only one new shareholder, A. Pappadakis, bought a significant part of the new shares (21) together with the 19 of Papiolakis. So 36 new shares (or 36,000 drachmas) remained for disposal on the Greek market, which, after certain transfers, reached 40 in 1860.<sup>22</sup>

Antonios Kambanis-Pappadakis 'son of Frangios',<sup>23</sup> from Crete, brother of the legendary Ishmail Ferik Pasha, was a wealthy land-owner and businessman in Athens, where he had settled some time in the 1840s, after serving on the Sturdza estates in Bessarabia. As we shall see, Pappadakis, who had studied Agriculture and became the most important –at a personal level– shareholder in the Société Séricole as well as a close collaborator of A. Durutti, must have influenced decisively some of the company's initial decisions. Of the remaining ten new shareholders, six belonged to the commercial network of M. Iatros-C. Durutti. The most important. Nikolaos Morozinis, was a merchant domiciled in Trieste, and probably still there.<sup>24</sup> The same was true of A. Papatheodorou, a merchant domiciled in Ancona. Spyridon Alexandrakis was a rising merchant in Kalamata, from where he had corresponded with M. Iatros since 1849 and then had dealings with the Société Séricole.<sup>25</sup> Anagnostis Liberakopoulos was another of M. Iatros's men, settled in Kyprissia in 1838, and later in Pyrgos, from where he collaborated with the Société Séricole.<sup>26</sup> No information has been gleaned on S.S. Askolis and Kallinikos Pappadoulas; they did not appear at the meetings however, where they were always represented by C. Durutti. Consequently it is deduced that they too were in his network. These five shareholders only held ten shares all together, that is an average of two each. Lastly, the circle of businessmen closed with the Epirote merchant Ch.I. Paramythiotis (6 shares) who was almost certainly associated with the Durutti brothers.<sup>27</sup>

The other three new shareholders, persons of high social standing, were affluent professionals or officials who invested capital (of course limited) in the company with a view to drawing an income, while at the same time backing its 'patriotic' and 'public-benefit' image. All residents in Athens, they participated in the general meetings. They are Ioannis Chatzi-Petros,<sup>28</sup> senator, who usually chaired the meetings, Alexios Pallis, well-known Epirote physician and university professor, and lastly Demetrios K. Soutzos, solicitor in Athens, who had drawn up the Wrampe contracts, member of a well-known

**TABLE 2**  
**DISTRIBUTION OF SHAREHOLDERS ON THE BASIS OF THE NUMBER OF SHARES**

Number of shareholders	Number of shares per shareholder	Total of shares	
		No	%*
6	32-40	201	66,2
3	19-24	62	20,4
10	2-10	40	13,2
19		303	99,8

\*The percentages are calculated on the total of 304 shares.

**TABLE 3**  
**DISTRIBUTION OF SHARES**

Shareholders	No. of shares	%
French shareholders around Roeck	71	23,4%
Durutti-Iatros family	88	29,0%
Remaining original shareholders and A. Pappadakis	104	34,2%
Shareholders represented by C. Durutti	18	5,9%
Remaining new shareholders	22	7,2%

Phanariote family related to the Tsatsos and Mavrokordatos families.<sup>29</sup>

In completing the picture of the shareholders, founding and otherwise, of the Société Séricicole, mention should be made of their rather advanced age. Of the sixteen Greek shareholders, the ages of ten are known; of these seven were over 40 in 1854 (two indeed over 50, that is old men for the period), while of the remaining three, two (A. Durutti and I. Tsatsos) were nearly 40 (38 and 37 respectively). Of course the Société Séricicole was essentially in the hands of one of the younger shareholders. Nevertheless, it is clear that its owners had spent the greater part of their working life in pre-industrial economic environments and had neither the stamina nor the adaptability of younger men. Some inflexibilities in the group, that were to become apparent later, perhaps should be associated with the factor of age.

It is clear from Table 1 that this distribution of shares had been finalized at the general meeting for 1857. On the one hand Roeck had by then transferred the greater part of his shares to merchants in Lyons who collaborated closely with the Société Séricicole, on the other Constantine Durutti had made 18 shares available in his own network. Perhaps the company's positive results in 1856 –essentially the only reasonably favourable year, as we shall see– facilitated placing the shares. In the end Roeck kept 19 shares, that is half his original participation, and soon came into opposition with the Société Séricicole. However, till the end the French participation in the enterprise remained quite important (23%). The final distribution of shares, as formed around 1857, can be seen in Table 2.

26. In two letters from Anagnostis Liberakopoulos to M. Iatros, in 1838 (MIA, vol. V), it seems that he had a public post at that time, since he asked Iatros to intermeditate with some 'friend' in Nauplion in order to secure his transfer there or to Corinth.

27. Just as he was friendly with his other fellow Epirote Christodoulos Efthymiou, see in connection Εὐτυχία Λιάτα, *Τιμές και αγαθά στην Αθήνα* (1839-1846) [Eftychia Liata, Prices and goods in Athens (1839-1846)], MIET, Athens 1984, 67. Paramythiotis was dead in 1860, from which time C. Durutti represented his share in the meetings, as 'assignee of his children who were minors'.

28. Yannakis Ch. Petrou took part in the General Assemblies at Troezen (1827) and Argos (1829) as plenipotentiary of the province of Aspropotamos, and would certainly have known Ioannis Tsatsos's father, see A. Μάμουσα, op. cit., vol. VIII, Athens 1840, 17, vol. IX, Athens 1841, 153 and vol. XI, Athens 1852, 16. See also Βουλή των Ελλήνων, *Μητρώο Πληρεξουσίων, Γερουσιαστών και Βουλευτών 1822-1935* [Greek Parliament, Register of Plenipotentiaries, Senators and Deputies 1822-1935], Athens 1986, 54.

29. Descendant of the brother of the Prince of Wallachia and Moldavia, Michael Soutzos, Demetrios (1795-1865), notary at Athens, was son of Konstantinos Soutzos and Argyro Skanavi. Many members of his large family were related to the Rosetos and Mavrokordatos families. Demetrios married Eleni, daughter of Demetrios Schinas, (1798-1858), in whose name were the shares of the Société Séricicole that were transferred to his son Konstantinos after her death. See Sturdza, op. cit., 29 and *Ελληνες ηγεμόνες Βλαχίας και Μολδαβίας* [Greek princes of Wallachia and Moldavia] (with foreword by Evangelos Fotiadis), Athens 1972, 223.

As in other companies, here too the minority of the strong shareholders, that is the six largest shareholders (or 32% of the shareholders), controlled the absolute majority of the shares (66%) and indeed also formed marginally the quorum for the general meeting, a two-thirds majority. However, this impersonal distribution has little meaning. In Table 3 it is clear that in substance the absolute majority was controlled by the nucleus of Greek original shareholders (Durutti-Iatros family and the other two original shareholders together with A. Pappadakis). The Durutti brothers, together with the 'silent' shareholders of their circle, controlled 106 shares, a little over one-third of the total; in practice, with the association of at least one of the other three basic shareholders, they controlled the absolute majority of those present, since the number of shares represented at the meetings fluctuated between 250 and 295, and was usually in the range 277-287.

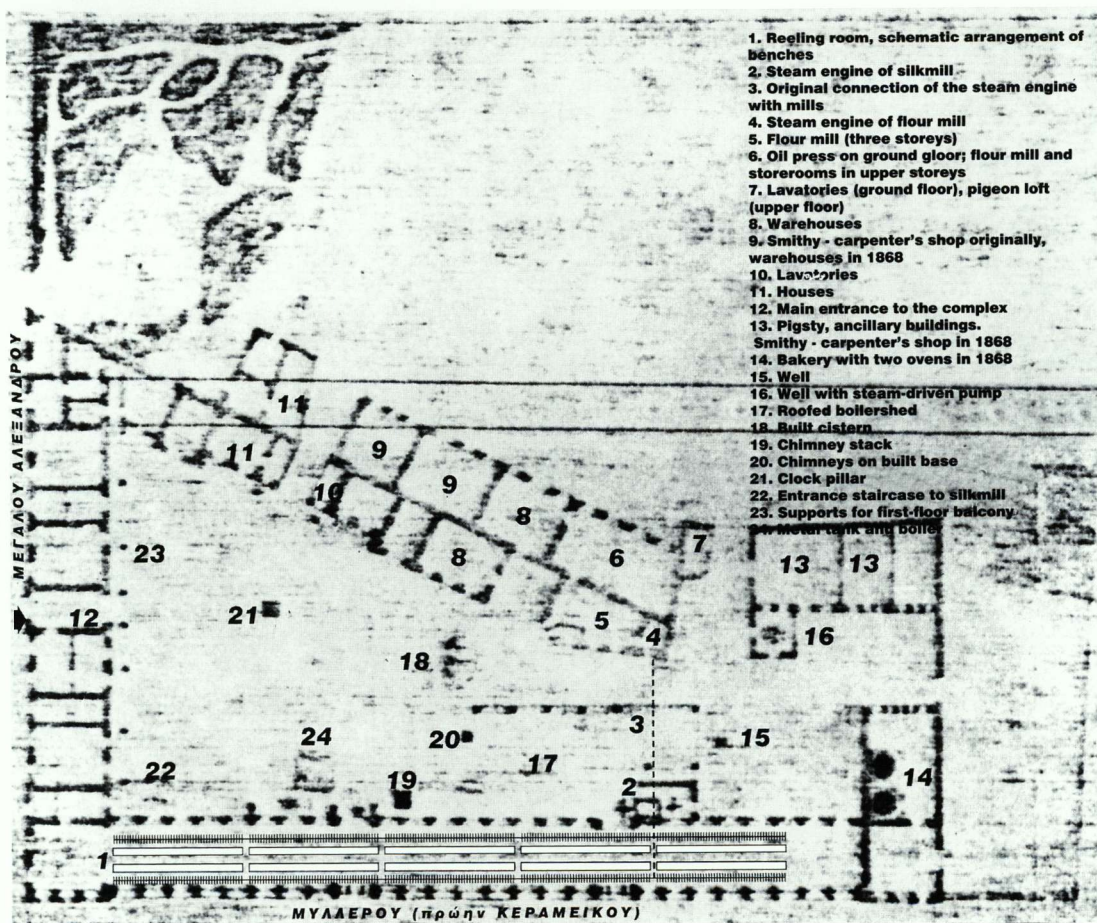
Nevertheless, no hasty conclusion should be drawn that the above distribution was the result of a specific strategy on the part of the original shareholders or of the Durutti brothers in particular. A greater number and consequently a greater dispersal of shares did not necessarily mean removal of control from the nucleus of basic shareholders, as is in any case shown by the example of Constantine Durutti, who apportioned a greater number of shares to third parties and kept less for himself. In any case, by its very nature the Société Séricicole could not be 'mass', as the *sociétés anonymes* later became –nowhere in the world are joint-stock companies (*sociétés en commandite*) mass– which fact is obvious from the value of the share (1,000 drachmas), high considering the circumstances of the day. Moreover, in the end the French participation seems to have had a symbolic significance greater than its actual proportion of the total capital.

Perhaps more important is the ascertainment that the composition of the new shareholders of the Société Séricicole gives the impression of a judicious amalgam of economic and social power: combining experienced merchants of notable financial standing and socially prestigious persons, the omens for the first industrial firm in Greece seemed particularly propitious. It had in any case a distinct identity: that of the generation of the War of Independence, of the men who took part, from positions of power, in structuring the new society. Their national and social action has overshadowed their economic activities in Greek historiography. It is possible that in their consciousness both levels were connected: pure economic rationalism only exists in theory. How economic practices were invested with the national ideological mantle is an issue awaiting research. The fact remains that for the men of this generation, this was the dominant mechanism for giving meaning to their actions.

#### **The gradual formation of the complex: the technical parameter.**

The technical issues, frequently undervalued in studies of economic



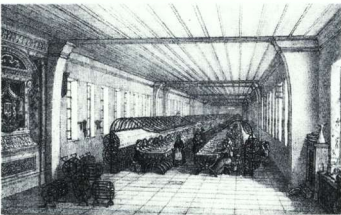


history, are among the most significant difficulties industry has to face in countries with limited technical tradition and infrastructure. The Athens silkmill was, in a way, a factory delivered 'with key in hand' and the technique of reeling was not unknown in Greece. Even so, harnessing the techniques of steam and assimilating the advanced systems of reeling required the presence of French silkworkers, male and female, for several years, while more serious technical problems emerged as the plant was extended and adapted to new uses, which to a great degree determined the development of the enterprise during the first ten years. Analysis of these problems reveals the forces expended and the additional expenses their solution demanded, while knowledge of the technical equipment enables us to understand better the

2. Plan of the ground floor of the complex, as it was in 1868. The positions of the basic equipment and the uses of the areas are marked according to the description in the Auction Report of 1865 and the later alterations.



3

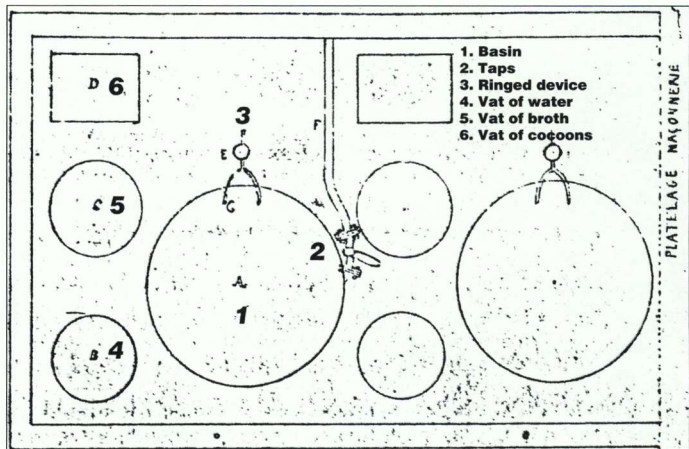


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3. Interior of an Italian silkmill.  
(Photograph from *Le fabbriche magnifiche*,  
op. cit. 99).

4. Interior of the reeling room.  
(M. Papadopoulos-Vretos, *Ημερολόγιον*  
1864).

5. The reeling bench (two adjacent work  
places). Plan with key (originally in  
French) and no other indication.  
(Chr. Zioulas Collection).



PLATELAGE NAΨΟΥΝΕ

5



nature of the investment options, as well as to interpret the morphology of the premises.

The descriptions available to us are naturally summary and sometimes unclear, since they were probably made by non-experts; nevertheless, they enable us to reconstruct the arrangement and the basic features of the equipment (see fig. 2).<sup>30</sup> The principal reeling room was the long, narrow spacious hall on the west side,<sup>31</sup> with 36 windows onto Kerameikou street and another 28 opposite, facing the courtyard of the complex. Along the length of the two long sides were two rows of bronze benches with cast-iron bases, in which the basins were incorporated.<sup>32</sup> Each bench (15-16 m long) had 24 basins and each row five benches, that is there were 120 basins on each side, 240 in all.<sup>33</sup> The workplace corresponding to each basin was 63-65 cm wide, consequently the reelers sat very close together, as can be seen in the picture from a similar Italian silkmill (fig. 4).<sup>34</sup> With their back to the wall, they faced the centre of the hall, with the basins in front and the wheels behind them (fig. 3). This arrangement left the central passage free for supplying the basins with cocoons by a separate group of workers (usually young girls), as well as for the better supervision of the work by the overseers, who can also be seen in fig. 3.<sup>35</sup> In order for the silkwormers to keep an eye on the reeling of the filament on the wheel, they sat on rotating stools.<sup>36</sup>

On the periphery of each basin (fig. 5) there were two stop cocks, terminals of the water and steam system, with which the reeler controlled the input to the basin. The first system was supplied by a water-tank in the courtyard and the second by a boiler, also in the courtyard, next to the boiler of the steam-engine. The pipes ran under the benches with the basins. The handling of the whole system required skill and speed, because the reeler had to turn on the steam in order to bring the water in the basin to boiling point when she threw in the cocoons, and then to reduce the temperature gradually by opening the cold water tap, while simultaneously stirring the cocoons with the 'besom'. Next to the basin were three vats, one that indicated the water level, one for the broth of pupae and a portable one for the cocoons.<sup>37</sup> There was also a device with two rings ('main grip for the thread'), into which the bunches of filaments entered, as soon as the reeler caught their beginning from each cocoon. What followed is described in the 1854 report: 'above each cauldron there is an iron filatory and two wires, and porcelain; each cauldron has opposite an iron wheel and two reels...'. This was the system of double reeling, the so-called *à la Chambon* (two bunches from each basin, fig. 6).<sup>38</sup> The basic difference from the system *à la tavelle* (one bunch), relatively later, lies in that this second system left less waste (shrinkage) and unravelled a more even filament, since it restricted the danger of the double thread (*filo doppio, mariages*: when a bunch snapped), but the quality of the thread, in terms of fineness and sheen, was better from the *à la Chambon* system. The detail has some significance, because it shows that the original investor (the

30. There are descriptions of the silkmill in its initial phase in the Auction report 1854 and the advertisement entitled 'Société Séricicole de la Grèce', published in *Spectateur d'Orient*, 3 (1854-55) (without page numbers). The second description was also published in Greek, in the pamphlet *Σημειά Εταιρεία της Ελλάδος* [Société Séricicole de la Grèce], op. cit., 3-10, where certain technical details were, however, omitted. The same text, *Μεταξουργείον εν Αθήναις* [Silkmill in Athens], also appears in *Πανόραμα*, iss. 116, vol. 5 (1855), 476-478, from where the description of the silkmill in *Αθήναι* 19.1.1855 is taken. The factory is described in its final form in the 'Notification of Auction Day', published together with the 'Report on compulsory confiscation' in the newspaper *Διασταυρώς Κλήτη*, iss. 580, 7.8.1865 (henceforth: Notification of auction 1865).

Supplementary information has been used here from the description by A. Gaudry, op. cit., 321-322, republished in Greek translation in M. Papadopoulos-Vretos, *Εθνικόν Ημερολόγιον του Έτους 1864*, vol. IV, 73, together with the relevant illustration (see here fig. 3). The courtyard and the water supply systems are described in two 'Valuers' Reports', dated 29.3.1860 and 18.10.1860 respectively, in the Chr. Zioulas Collection. The technical details of the reeling system (filatories) are from L. Vignon et I. Bay, *La soie au point de vue scientifique et industriel*, Encyclopédie Industrielle, J.-B. Ballière & fils, Paris 1914.

31. I use here the orientation given in the Auction report 1854 (west the side onto Kerameikou street, which is designated as south in the Notification of auction 1865).

32. Copper according to Gaudry, op. cit., 321, of tinned copper according to the description in *Spectateur d'Orient*.

33. Each bench must have comprised three sections of eight basins, because in later phases of the silkmill the (reduced) number of basins is always a multiple of eight (see here below).

34. Many similar illustrations in the excellent book published by the University of Turin in collaboration with several other bodies, *Le fabbriche magnifiche. La seta in provincia di Cuneo tra Seicento e Ottocento*, Cuneo 1993.

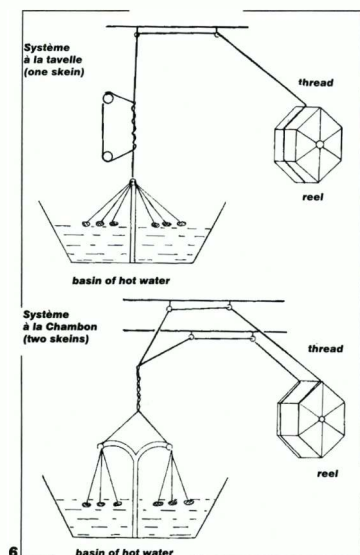
35. The arrangement was the same in the Loukas Rallis silkmill, see Gaudry, op. cit., 319. It seems that in the Piedmontese silkmills the arrangement in which the reeler had the basin and the filatory in front of her was more usual. In this case supervision was more difficult because the overseer saw the reelers' back from the central aisle, while the cocoons were supplied from the aisle between the row of basins and the row of filatories; in other words the whole system required more room (see *Le fabbriche magnifiche...* op. cit.).

36. The Auction report 1854 mentions 'walnut chairs... round and swivelling', and Gaudry 'tabourets tournant sur vis'.

37. The adding of broth from pupae to the water in the basin was common practice in most silkmills of the period. It was intended to facilitate the reeling, even though some considered that the real reason was to increase the weight of the filament, which absorbed part of the sticky substance from the broth, see L. Vignon - I. Bay, op. cit., 125.

38. The description in *Spectateur d'Orient* is clearer: 'le système est à deux bouts'. See also I. Brossard, *Technologie des textiles*, Dunod, Paris 1977, 91 (from where fig. 6 is taken).





**6. Schematic representation of the two reeling systems (filatories) (after I. Brossard, *Technologie des textiles*, Paris 1977, 91). Système 'à la tavelle' (one skein) basin of hot water thread reel**

British company) was not so interested in economizing the raw material. It could be thought, justifiably, that cocoons were abundant in Greece (the expansion of mulberry plantations had already begun); but this situation was soon reversed.

The bunches of filaments were fed to the reels through the rings of a horizontal bar, that was connected to a shuttle mechanism so that the thread was not wound round the same point but was evenly distributed across the width of the reel and did not 'stick'. The descriptions available make hardly any reference to this mechanism, but the curved horizontal, metal bars that can be seen in fig. 3 are probably parts of it. The distance between the two rows of benches was necessary because the silk filament emerging from the basin, fine and sticky, had to dry out and 'set' before being wound on the reel.

The reels had an iron axle and a wooden tympanum of hexagonal section and maximum diameter usually 70 cm. The 'iron wheel' was below each pair of reels and constituted part of the whole system of transmitting motion. An axle traversed each row of benches and linked, at the height of the steam-engine, with its driving wheel, via a pair of pulleys and belts. It is not clear in the descriptions or in fig. 3 how the motion was transferred to the row of benches on the opposite side to the steam-engine: most probably via wheels and pulleys on the ceiling of the hall, so as to leave free the central passage. The steam-engine was horizontal,<sup>39</sup> 8 horse-power, one cylinder and set on marble. It was located together with the boilers in a special building in the courtyard, attached to the spinning hall, with which it communicated with a railing, presumably for safety reasons.<sup>40</sup> The driving wheel weighed 1,500 okas.

The direct connection of the steam-engine with the rows of reels attests that it had been installed exclusively for driving the filature. This arrangement, which was usual in silkmills, water-powered and steam-powered, of course restricted loss and permitted the use of limited horse-power (which in any case did not need to be great), but it was not flexible:<sup>41</sup> the subsequent attempt to connect this steam-engine to the new production units proved abortive.

The cylindrical boiler of the steam-engine (about 8 m long and 1 m high) and the boiler producing steam for the basins (9 m long) were built into brick bases and set 'upon iron gratings' over the fire sources. From the Société's balance sheets, which will be discussed below, it seems that the steam-engine of the silkmill was mainly fuelled with charcoal and only boosted with pit-coal from Kymi. There was a third boiler too, perhaps auxiliary, 11 m long.

To complete the description of the silkmill, it should be noted that the entire upper storey, above the reeling room, was arranged as a cocoon-rearing shed, with the necessary 'beds', and that its movable equipment included 240 baskets for carrying the cocoons to each basin, an equal number of 'besoms' for stirring the cocoons, perforated bronze basins (colanders) that were placed inside the permanent ones, instruments for measuring the silk,

39. Rather unusual at the time, see in connection Maurice Daumas, *Histoire des techniques*, PUF, vol. 3, Paris 1968, 65, and vol. 4, Paris 1969, 6: the diffusion of the horizontal steam engine, the superiority of which was acknowledged at the Universal Exhibition in London (1851) and in Paris (1855), began in the mid-nineteenth century.

40. The exact position of the engine can be seen in the drawing made in 1868 (see fig. 2).

41. The central driving shaft on the ceiling, with which all kinds of machines could be connected directly, was of course far more flexible and prevailed in all the factories until the introduction of electricity, which completely changed their arrangement.

thermometers, a clock on the wall, ladles etc.

The silkmill of the Société Séricicole was justifiably described as 'magnificent'.<sup>42</sup> In reality, however, it suffered from congenital gigantism. Certainly its equipment was excellent, and in a period in which mechanized filatures were few and far between it was designed from the outset to exploit steam power even for driving the filatories.<sup>43</sup> This refutes, at least in their general and axiomatic version, the oft repeated arguments that capital investments by advanced countries in less advanced ones initially aimed at exploiting their cheap labour force. In the silkworking sector in particular, the cost of specialist labour, which was not replaced by mechanization, was inelastic and everywhere relatively low simply because it was female.<sup>44</sup> Mechanization replaced unskilled male labour, which was expensive and, primarily, difficult to find for industry everywhere – and certainly in Greece in the mid-nineteenth century.<sup>45</sup> As is so often the case, very little is known about this 'silent' protagonist in the Athens silkmill, that is its labour force. All that is known is that women and young girls were employed, and that in 1874 their daily wage ranged between 0.50 and 1.70 drs.<sup>46</sup> At that time, when the silkmill's operation had already been restricted to 135 basins, it employed 140 women, only 2 of whom were literate, while a young girl, under 12 years old, is recorded. During the early years, when it was working at full capacity, the silkmill must have employed 250-260 females, together with their assistants and the overseers.<sup>47</sup> It would not have been difficult to find this number of female workers in the capital at that time, for the influx of migrants had already begun and, judging by the many references, poverty and begging were serious problems.<sup>48</sup> The possibility that several women would come from the surrounding villages of Attica cannot be ruled out either.<sup>49</sup> The work was not regular all year round; the silkmill operated intensively during the summer and autumn months, from June, when the cocoons were gathered and sorted, till about the end of year, when, as can be seen from the Société's balance sheets, the greater part of the annual harvest had been absorbed. We do not know whether the silkmill shut down completely during the months January to March, like the Rallis factory.<sup>50</sup> But even if the jobs were more evenly allocated throughout the year, it is certain that rarely would all the women be employed simultaneously as its operation at full capacity demanded: its annual production, as we shall see, was equivalent to 3-4 months of full working. It is more likely that employment fluctuated, depending on the availability of reellers and the work offered, a practice that was still applied many years later, at least in the wider sector of the textile industry. The creation of a large factory in Athens in the mid-nineteenth century, and indeed in a sector where the nature of the work had strong rural roots, did not necessarily mean the automatic introduction of systematic forms of industrial type labour, even though the gathering of so many workers under the same roof and in a 'mechanized' environment was of itself an important change.

42. See Gaudry, op. cit., 321 and Πανδώρα, op. cit., 477. The Athens silkmill was not the largest in the East, as was claimed; the sole silkmill in Smyrna, founded ten years earlier by the French businessman Mathon, was operating 252 basins in 1854. The rest were of course smaller: of the nine in the Lebanon, the largest had 90 basins (Gaudry, op. cit., 246-249, 297). Perhaps the success of the Smyrna silkmill was one of the incentives for creating such a large filature in Athens. However, the first had access to a marginally inexhaustible cocoon market, at least from the moment the resistance of the traditional silk reellers was overcome.

43. Even though mechanized filatories had been operating in Turin since 1807 (invented by Ferdinand Genoul in 1804), the system did not become widespread until the late 1840s, when iron steam boilers replaced copper ones. The 20 or so silkmills in Thessaloniki, for example, were not steam-powered (Gaudry, op. cit., 308). At first the L. Rallis silkmill at Piraeus (1844) did not even use steam for heating the basins (this can be seen in the illustration of its interior, with the characteristic built hearths under each basin, see Μεταξουσίου Λ. Ράλλη, *Πανδώρα*, iss. 67, vol. 3 (1853), 445). Steam was introduced into the installation in 1847, just for heating, and only in 1853, when Gaudry visited the factory, was Rallis thinking about introducing mechanization (Gaudry, op. cit., 319: 'M. Ralli est sur le point d'établir une machine à vapeur pour faire mouvoir ses guindres').

44. Female, or more rarely, child: according to Gaudry, op. cit. 203, in the silkmills of Syria and the Lebanon at this time young boys, aged between 12 and 20, were mainly employed.

45. Rotating the reels with the crank handle did not demand so much strength as stamina, for which reason it was a man's job. In L. Rallis's silkmill the four men who turned the reels (in rows of ten) earned a daily wage of 2 drs in 1853, whereas the reellers earned 1.2 drs (and novices 0.40), see Μεταξουσίου Λ. Ράλλη, op. cit., 449.

46. Preserved in the Chr. Zioulas Collection is a printed census form entitled 'Βιομηχανικά καταστήματα' (i.e. industrial premises), filled in with details on the Durutti factory; it seems from the entries that this is for the year 1874 and must come from the census attempted by Alexandros Mansolas; henceforth: Industrial premises 1874.

47. In a letter of 21.2/5.3.1857, addressed to the queen, L. Roeck refers to '300 poor families of Athens'; the number, perhaps somewhat inflated, must include all the personnel of the silkmill (GSA, Otto Archive, Ministry of the Interior, file 252).

48. See on this subject, Μαρία Κορασίδου, *Οι φιλάνθρωποι μιλούν για τους φτωχούς και τη φτώχεια στην Αθήνα του 19ου αιώνα* [Maria Korasidou, *The philanthropists speak on the poor and the poverty in 19th-century Athens*], *Τα Ιστορικά*, iss. 17, December 1992, 385-404. On the relief distributed to the paupers of Athens see also Christiana Luth, op. cit., 188 and 264 editor's n. 299.

49. Hints on the domestic production in Attica of silk 'in the French manner', after the founding of the new state, in *Ελληνικός Ταχυδρόμος*, year III, iss. 26 (27 April/9 May 1839), 102.

50. Temporary closure of the silkmills during the winter months was usual because reeling could not take place at low temperatures. However, the Athens silkmill had a heating system in the workshop, see article by Aristeia Papanicolaou-Christensen in this volume).



When the silkmill was operating normally the working day was 10 hours long,<sup>51</sup> while working conditions must have been fatiguing, with heat and steam rising from the 'cauldrons' during the reeling process.

Apart from the female reelers, the silkmill of course employed a certain number of men, for the machinery and various other tasks. It was not easy to find specialist workers (stokers etc.) for the machines: according to a subsequent testimony of Durutti, during the first two years 'because of lack of work hands, not all the factory's boilers had been put in action'.<sup>52</sup> In 1874 there were three male workers, only one of whom was literate, earning daily wages of 2.50 to 3 drs. During the first decade, and always according to the firm's balance sheets, some 12-15 permanent (that is salaried) workers and clerks were employed. The presence of French women silkwormers was particularly important during the first couple of years, after which it seems to have diminished though never ceased completely.<sup>53</sup> French engineers and mechanics also worked in the silkmill, though only one of them is known by name, Desgeorges. He was the factory engineer in 1856, when he was summoned by the palace to install the new pump in the royal garden,<sup>54</sup> an episode that attests the silkmill's role in promulgating new technologies generally. Lastly, during the early years some men earned wages, probably as labourers, in the silkmill's orchard (opposite Kerameikou street), where mulberry trees had been planted. The business does not seem to have been involved in systematic production of its own cocoons: it must have limited itself to experimenting with varieties and producing eggs, which it indeed sold. So the upper storey of the reeling room was only used for storing and preparing cocoons.

### 'The surplus power...': expansion

Diversification into new branches of industry was decided on at the first general meeting of shareholders in June 1855, after Athanasios Durutti's timely diagnosis that an investment of this size could not bear satisfactory yields from one, basically seasonal, activity. Durutti expressed himself as follows: '...with regard to the surplus power generated by the steam engine, it would be most beneficial to the company to set up a flour mill and an oil press'.<sup>55</sup> The choice of the flour industry, which in the developing capital was still in the stage of horse-driven mills and watermills, is indicative of the turn towards the home market, and indeed towards a staple product that was to be the basic mainstay of later Greek industry. However, the concept overall recalls the model of the diversified 'self-sufficient' productive unit of the large estate, the country 'farm': in other words, it brings to mind Antonios Pappadakis. This hypothesis is strengthened by the fact that purchase of land accompanied the new installations.

With the authorization of that first general meeting and in view of

51. This is also the estimated length of the working day in the Rallis silkmill (Μεταξουργείον Α. Ράλλη, op. cit.), while in the Athens silkmill it is referred to in the 'Valuers' report' compiled by I. Metaxas, I. Komninos and K. Nikolaou concerning the installation's water supply (see below) on 18.12.1860 (Chr. Zioulas Collection, henceforth: Valuers' report 1860).

52. Chr. Zioulas Collection, Decision no. 534/29.6.1865 of the Appeal Court, Nauplion.

53. In November 1855 A. Durutti mentions that 'five Frenchwomen were hired from France in order to teach the... reelers', as well as a French 'factory manager', see [A. Durutti], *Καθ' ἣν στιγμήν πρόκειται να συζητηθῇ το τελεωνειακόν δασμολόγιον...* [When the tariff of custom's duties is going to be discussed], Athens n.d. [1856] (collection of memoranda without title). The article in *Αθήνα*, 24.1.1856, mentions the same number.

54. Ch. Zioulas Collection, letter from the Lord High Chamberlain's office to the 'management of the Société Séricicole', dated 26.6.1856. Rocek had brought the pump and Desgeorges was summoned to the palace on his recommendation.

55. Chr. Zioulas Collection, Minutes of the Meeting 24.6.1855.



diversifying its activities, between September 1855 and late 1856 the Société Séricicole bought five plots of land adjacent to the east and south sides of the factory premises, of total area some 14,000 square cubits.<sup>56</sup> However, the correlating of these purchases with the new installations raises questions. Whereas the factory plot more than doubled in size (from 9,400 to 23,300 square cubits), the new buildings only occupied a very small part (about 1,000 square cubits) of the first plot bought, on the north side.<sup>57</sup> The location of the new complex essentially on the boundary of the old plot, was dictated by the position of the steam engine, 'the surplus power' from which would be exploited (see fig. 2). In the end this proved to no advantage. Consequently the purchases of land did not serve the needs of the new installations only. The spatial expansion of the unit and its final formation perhaps conceal models of autonomous productive complexes that combine agricultural production and processing, such as those encountered in the context of large estates or monasteries and mainly intended to secure the self-sufficiency of their own population. Such models must have been familiar to Antonios Pappadakis from his experience in eastern Europe, and it was Pappadakis who, as Durutti's assignee, went ahead with all the purchases. They fitted in with Durutti's plans for developing sericulture, as well as with actual needs for further sources of water (some plots had wells). The rest of the shareholders evidently had no objections to increasing the firm's real estate property, particularly in view of the rising price of land.<sup>58</sup> Nevertheless, these moves, the result of diverse intentions, do not bear witness to a clear strategy on the course of a newly-formed urban industry.

The new buildings and the equipment of the mill and press must have been completed by the end of 1856, when the flour mill was tested.<sup>59</sup> The two installations were located next to each other on the axis of the steam engine, with which they had been connected.<sup>60</sup> The flour mill had three pairs of millstones, brought from Belgium together with the responsible technician, and was fully equipped with grain cleaners, sifters and mechanical systems for feeding in the wheat.<sup>61</sup> But, in the words of Durutti himself, 'the silkmill engine did not have sufficient power to set even two stones of the flour mill in motion'.<sup>62</sup> Roeck was blamed for the erroneous calculation, for he had evidently been in charge of the technical side. However, the problem did not lie only in the insufficiency of horse-power. The whole improvised linking –largely by pot-luck– with an engine and boilers intended for other functions, almost certainly caused losses and malfunctioning. In any case, the order for a new engine, exclusively for the flour mill, which was decided on in early 1857 together with the increase in its capacity from three to six pairs of millstones, was again placed with Roeck's firm in Lyons, which shows that in this first phase at least the fault was not his alone.

In the second phase, however, Roeck, who was evidently not *au fait* with the workings of flour mills, was entirely to blame. According to Durutti, the

56. Chr. Zioulas Collection, contracts 1226/10.9.1855, 848/1.7.1856, 874/23.7.1856, 1373/26.10.1856 and 1526/29.11.1856, all of P. Poulos.

57. The first plot purchased was also the largest (approximately 8,000 sq. cubits); it belonged to Konstantinos Boras, 'chef at the palace', who had bought it from Prokesch Osten and the Merkourakis brothers (Chr. Zioulas Collection, contract 1226/10.9.1855 of P. Poulos); the price was 6,000 drs (or 0.75 dr. a cubit).

58. About one year elapsed between the first purchase and the next ones, during which the new installations had been completed. The first plot was bought, as we have said, at less than 1 dr. per cubit. The prices for the other plots ranged from 1.50 to 2.00 drs a square cubit.

59. First described in *Αθήνα* 24.1.1857.

60. The connection must have been made via an underground conduit and not overhead. This view is reinforced by the fact that in 1865 the then new engine was in the ground floor of the building, 'slightly sunk below the surface' (Notification of auction 1865), that is in the semi-basement space that had been created at the end of the transmission shaft.

61. The mechanization of mills had essentially been completed by the early nineteenth century, with Oliver Evans's perfection of the vertical flow.

62. Chr. Zioulas Collection, Minutes of Meeting 21.1.1862.

new engine from Lyons ‘failed totally and for the opposite reason to the first failure, since [...] the steam-mill [...] failed because of the excess power of the steam engine, disproportionate to the needs of the new premises, [which] rendered this useless, on account of the large quantity of fuel it required’.<sup>63</sup> In the end Durutti sued Roeck in the Lyons courts, winning his case in August 1858.<sup>64</sup> The whole of 1857 was taken up with fruitless efforts ‘to cure the steam-mill as far as possible’. In the end, in February 1858, Durutti went to Lyons, where, with the help of the Souchon brothers, who were also shareholders, he ordered a new engine and new boilers, and found another engineer, Paul Flechier, who undertook to install them in Athens.

The steam-mill was completed in March 1859, almost four years after the original decision to install it. Its problems did not end there, however: there is at least one testimony that in late 1860 it was being repaired once again.<sup>65</sup> According to Durutti it had cost 270,000 drs. Its trials and tribulations were to a large extent due to the operators’ ‘lack of technical know-how’, a lack which was not easily compensated for by inviting foreign ‘experts’, and certainly one that significantly burdened the company’s finances during the critical early years.

The final form of the flour mill and oil press is known from a description of 1865.<sup>66</sup> The flour mill had three-storeys (levels) above the semi-basement in which the steam-engine was installed. On the top floor there were two cereal cleaners and three separating machines (*burata*). The wheat was fed in pipes and funnels to the middle floor, where there were six pairs of millstones and the rotation system with the iron cog wheels. In this same space, at a lower level, there were two sieving machines, to which the ground wheat was transferred ‘along small containers of tin linked to others...’, that is the characteristic chain of little troughs; the same system most probably brought the wheat from the silo, located in the storey above the adjacent oil press, to the grain cleaners.<sup>67</sup>

On the east side of the same complex, there was the oil press on the ground floor and the silo in the upper storey. Inside the oil press there were the traditional circular tank with the pair of vertical stones, here rotated mechanically, and four oil presses, three of wood and hand-powered, and one of iron and steam-powered, as well as a tank of hot water that was linked to the boilers. Durutti later claimed that he was the first to introduce the oil-pressing industry (that is mechanized oil presses) to Greece.<sup>68</sup> The actual innovation here was the hydraulic press (shortly afterwards another two were added), because in all other respects the equipment was no different from that in water-powered oil presses.

The ‘forge’ and ‘carpenter’s shop’ must have originally been a double hand-powered workshop, installed in a makeshift single-storey building at the southeast edge of the courtyard; it was essentially a repairs workshop, ‘equipped with all the necessary tools’.<sup>69</sup> However, even in 1865 the machine-

63. *Ibidem*.

64. *Ibidem*. The court awarded 15,000 francs damages, possibly the price of the steam engine in France, which Durutti considered insufficient.

65. ‘We found [...] the flour mill repaired and two single stones of it moving...’, Chr. Zioulas Collection, Valuers’ report December 1860.

66. Notification of auction 1865, *op. cit.*

67. Hint on the entire mechanism in an earlier description in the newspaper *Αθήνα* 24.1.1857: ‘But this machine does not just grind the wheat; it cleans it too [...] and transfers the cleaned grain to the upper level, where it passes again through a sifter, and then [...] is poured into the mill’ (my italics).

68. Chr. Zioulas Collection, circular from A.G. Durutti, dated 6.7.1873 (a proposal by Durutti concerning the founding of a new company, that would be addressed to various recipients; it includes an extensive description of the factory, henceforth: Durutti letter July 1873). There is also a copy of the same letter in this archive (facsimile), with the note ‘August 1874’.



tools, a mechanical saw and a lathe for turning metal objects, were housed on the first floor of the flour mill. It is obvious that all the machinery of the new installations was literally 'crammed' around the steam engine, possibly to avoid transferring the driving force over greater distances, after the failed attempt to link up with the silkmill engine. When the workshops at the southeast edge were eventually completed, they were made independent by placing a third steam engine (donkey engine) there, that also functioned as a pump for the adjacent well.

The steam engine of the flour mill was 40 horse-power, most probably horizontal, with a large driving wheel weighing 4,000 okas (5.1 tonnes). By 1865, four other boilers had been added to the three of 1854; they were all located at the same point in the courtyard and beside them were three chimneystacks, one built right to the top and the other two built half way up with an iron flue above. Their position, near the boiler complex can be seen in the drawing made in 1868 (fig. 2).

### The water problem

Water was vital for operating the silkmill and the constant efforts to ensure a sufficiency of it were yet another source of additional expense and fatigue. They bear witness to the undoubted advantage of places endowed with rich water resources. When the silkmill began operating, the system of supply and circulation of water was as follows: there were three stone-lined wells in the courtyard, from which water was conveyed along pipes into two water tanks, one stone-lined at the centre of the courtyard<sup>70</sup> and the other a free-standing metal tank which must have been near the boiler complex and the steam-engine. Water was drawn by two steam-powered pumps, also located near the steam-engine.<sup>71</sup> The water was conveyed from the tanks to the boilers and into the network supplying the basins.

It soon became clear that the water supply was inadequate. Two of the three wells in the courtyard ran dry; the third was widened and deepened, and the two pumps brought closer to it. Next, the water tank was linked to the well in the orchard opposite, via an underground conduit with lead pipes. Last, three new wells were sunk, one at the northeast edge of the courtyard, one outside the complex, in the adjacent plot on the same side, and another on the south side of the courtyard, which were also connected to water tanks. The overall expenditure was 14,500 drs.<sup>72</sup>

The water shortage must have been particularly noticeable from the moment the flour mill was founded. However, within the climate of conflict with Roeck, Durutti, who surely had a weakness for litigation, sued him in court, in February 1859, maintaining that from the outset there was not enough water even for the silkmill; he claimed compensation from Roeck on the grounds that the latter had transferred the silkmill to the Société Séricicole

69. The excerpt is from *Spectateur d'Orient*, op. cit. In the Auction report 1854, only 'an iron lathe' is mentioned.

70. There was some cleaning system in this tank: 'une baignoire à jet d'eau servant à préparer l'eau pour le dévidage des cocons', see *Spectateur d'Orient*.

71. Chr. Zioulas Collection, Auction report 1854: 'two bronze pumps with all the necessities, built near the entrance to the reeling room'—that is near the steam engine—and one 'iron tank' that was 'upon the pumps'; according to the Valuers' report of December 1860, the tank was of lead.

72. All the information from the 'Valuers' report' prepared by G.V. Metaxas, K.E. Xanthis and K. Nikolaou, dated 29 March 1860 (in which the estimate of costs is given), the second Valuers' report of December 1860, already referred to, and judgment 534/29.6.1865 of the Appeal Court, Nauplion: all documents in the Chr. Zioulas Collection. It seems from this last verdict that other Valuers' reports had been made in 1863 and 1864; in the end the court only acknowledged an outlay of about 9,000 drs, whereas Durutti claimed that during the first year he brought water from elsewhere, although he had no proof of the cost (650 drs).

‘under the express guarantee of the existence of the necessary [...] water there’.<sup>73</sup> Of course, after adding the steam-powered mill, the increased consumption of water and the new works that had taken place, it was not easy to prove whether there had been sufficient water for the initial phase of the factory. The case dragged on for six years, appraisers prepared a series of reports and it is possible that the relatively favourable decision for Durutti by the Court of Appeal in June 1865, when the Société Séricicole was being dissolved, facilitated the final expulsion of L. Roeck from the business, without compensation.<sup>74</sup> What is certain is that the rift with the main foreign shareholder, which was mainly caused by technical matters and the expected difficulties of getting off the ground, created an unpleasant atmosphere and decided the fate of the company form.

With these successive additions, rearrangements and continuous transformations in its early years, the Athens silkmill developed into a factory complex of multiple uses, a composite cell of production and housing at the very gateway to the capital. Its courtyard, with workshops, warehouses, stable and residences of the director and some employees, its wells and pumps, its boilers and engines, must have been a hive of activity, with constant movement and, of course, deafening noise.<sup>75</sup> The technical parameter, that is the technical difficulties of installation on the site, which are usual for every industry, were here burdened by effort, time and expense resulting from lack of any prior experience.

### Towards the demise of silk reeling: silk or cocoons?

The silkmill began operating at the beginning of 1855, producing mainly fine silk and smaller amounts of coarse silk. The quality of the product was improved continually, while all the filatories were in operation by September 1855.<sup>76</sup> At that time the mean daily output per basin with the *à la Chambon* reeling system was estimated at 200 to 300 grammes, depending on the nature of the silk yarn and the number of filaments of which it was composed (its title).<sup>77</sup> With a corresponding yield per basin, the overall production of the Athens silkmill must have fluctuated between 48 and 72 kilos, and the annual output, for 225 working days,<sup>78</sup> ranged from 10,800 to 16,200 kilos.<sup>79</sup>

Our information on the actual production of the silkmill during the first decade concern its annual value and is taken from the Société Séricicole’s book of ‘Balance Sheets’ (Table 4).<sup>80</sup> From the value we can calculate the volume of the output on the basis of the mean annual price of silk. Direct and reliable information on the price of fine silk is only available from the balance sheets for the first two years, 1855-1856 (71.52 and 96.77 drs/kilo respectively).<sup>81</sup> For the succeeding years we shall use indirect but quite reliable information: the prices quoted by Alexandros Mansolas (1867), which, as he

73. Chr. Zioulas Collection, judgment 534/29.6.1865 of the Appeal Court, Nauplion.

74. It is not known whether judgment 534/2.9.1865 of the Appeal Court, Nauplion, the only extant one, was also an ultimatum (by then the case had passed through the Court of the First Instance, the Appeal Court at Athens and the Supreme Court); this decision judged Roeck responsible for the lack of part of the extra water required, and consequently ordered him to pay part of the costs of the new works (4,198 drs plus 12% interest from 1859); it seems that Roeck’s 19 shares had already been provisionally seized and the Appeal Court ratified this, also authorizing their sale in order to pay off the debts.

75. By 1865 a large clock had been erected in the courtyard, on a stone-built base 4 metres high, essential symbol of the new relationship with time brought in with the industrial age.

76. See. A. Δουγοῦτη, *Καθ’ ἑν...*, op. cit., 7.

(memorandum 15.11.1855); the silkmill in fact participated in the Paris World Exhibition in 1855.

77. In this same period the productive capacity per basin in the Loukas Rallis silkmill was estimated at 125 drams (for 10 working hours) or 400 grammes, and the actual mean daily output as 75 drams or 240 grammes; in other words it was within the above averages

(‘Μετοξουργεῖον Λ. Ράλλη’, op. cit. 449). If the yield of 180 drams (577 grammes) (see the article by Maria Christina Chatzioannou, in this volume), is not exaggerated, it must refer to a completely different system, with less wastage and of course much coarser thread. It should be noted that in none of the documents of the Société Séricicole is the exact title of its silk mentioned (see in connection n. 105 below).

78. We stick to this annual work period here, albeit less favourable to our arguments, even though the silkmill had no *a priori* reason to cease operating for three months, like the Rallis factory at Piraeus.

79. In 1873 Durutti calculated an overall capacity of 15,000 kilos for 250 basins, and 7-8,000 kilos for the 132 basins then available in the silkmill, see Chr. Zioulas Archive, Durutti letter July 1873.

80. The ‘balance sheets’ are presented in greater detail below. Here it is simply noted that the indications for silk production are included in the accounts headed ‘Fine silks’ and ‘Coarse silks’. In the first two years they appear in the assets from ‘Operating Results’, while in the following ones they are included in the liabilities of the ‘balance sheets’, each time as the sum of all the preceding years, beginning from the balance sheet of 1858. So the value of output for each balance year that appears in Table 4 was obtained after the necessary subtractions.

81. In ‘Operating Results’ for these years the volume of production is noted precisely, in okas and kilos, the number of bales and the price.



**TABLE 4**  
**VALUE OF PRODUCTION (SILKS FINE AND COARSE), 1855-1864**

<i>Date of balance sheets</i>	<i>Production period</i>	<i>Fine silks (drs)</i>	<i>Coarse silks (drs)</i>
31.12.1855	1855	258.009,34	9.970,23
31.12.1856	1856	718.182,7	26.888,25
30.6.1858	1857/1858α	491.666,65	28.526,18
30.6.1859	1858β/1859α	308.504,37	12.194,72
30.6.1860	1859β/1860α	253.772,80	10.179,72
30.6.1861	1860β/1861α	269.104,50	10.975,45
30.6.1862	1861β/1862α	181.487	15.953,58
30.6.1863	1862β/1863α	5.699,05	7.202,58
30.6.1864	1863β/1864α	43.241,2*	1.736,58
31.12.1864	1864β	43.343,45	4.460,85

\* Of these 3,724.95 drs in a separate account headed 'Organsins et trames'.

**TABLE 5**  
**PRICES OF FINE AND COARSE SILK, 1855-1964**

<i>Year</i>	<i>Prices according to Mansolas (average, drs/kilo).</i>	<i>Index 1855=100</i>	<i>Prices of fine silk (drs/kilo)</i>	<i>Prices of coarse silk (drs/kilo)</i>
1855	70,78	100,00	71,52*	25,65
1856	95,16	134,44	96,15 [96,77*]	34,49
1857	102,5	144,81	103,57	37,15
1858	86,72	122,52	87,63	31,43*
1859	100,5	141,99	101,55	36,42
1860	109,37	154,52	110,5	39,64
1861	81,82	115,6	82,68	29,65
1862	88,72	125,35	89,65	32,15
1863	—	[125,15]	89,5	32,10
1864	88,45	124,96	89,37	32,05

\* The prices are from the Societe's books.

says, come from 'information that Mr Ath. Durutti was kind enough to give me from his books'.<sup>82</sup> From the average of Mansolas's prices an index was constructed, on the basis of the year 1855=100, and the prices then derived from this (see Table 5).<sup>83</sup> The same was done for the prices of coarse silk, for which the balance sheets only give the mean price in 1858: 31.43 drs/kilo,<sup>84</sup> on the assumption that these will have followed more or less those of superior quality silk. Mansolas has no price for the year 1863 and consequently the average for the indices of the years 1862 and 1864 is obligatorily used here.<sup>85</sup>

82. See. A. Μανσόλας, *Πολιτειακαί πληροφοριαί περί Ελλάδος* [A. Mansolas, State information about Greece], Athens 1867, 111. The prices in Mansolas's work are per oka and have been converted here on the basis of the ratio 1 oka = 1.282 kilos. The average derived from Mansolas's data deviates very little from the prices available for the first two years from the company's ledgers: e.g. for 1855 Mansolas gives 84.70-96.80 drs/oka, that is on average 90.75 drs/oka = 70.78 drs/kilo, while in the ledger of balance sheets 71.52 drs is noted. Therefore we can assume that Mansolas's evidence is reliable.

83. As the Table shows, the price reckoned in this way for 1856 hardly deviates at all from that in the ledger of balance sheets (96.15 instead of 96.77); we shall of course keep the second figure for our calculations here.

84. From various analytical entries in the assets of the balance sheet for 30.6.1858 (coarse silks to various agents), a mean price of 31.43 drs/kilo emerges, which corresponds to about 25,000 kilos, that is it covers the greater part of coarse silk production in that year (see Table 4).

85. Our estimates are verified by certain snippets of information in the balance sheets, concerning the price of fine silk in 1858.

**TABLE 6**  
**VOLUME OF PRODUCTION (SILKS FINE AND COARSE), 1855-1864**

Production period*	Fine silks <sup>†</sup>			Coarse silks <sup>†</sup>			Total Volume (kilos)
	Value (drs)	Mean price drs/kilo	Volume (kilos)	Value (drs)	Mean price drs/kilo	Volume (kilos)	
1855	258,009,34	71.52	3,607,462	9,970.23	25,65	388,7	3,996,162
1856	718,182,70	96,77	7,421,465	26,888,25	34,79	779,59	8,210,055
1857/58α	491,666,65	95,6	5,142,95	28,526,18	34,29	831,91	5,974,86
1858β/59α	308,504,37	94,59	3,261,49	12,194,72	33,92	359,51	3,621,00
1859β/60α	253,772,80	106,02	2,393,63	10,179,72	38,03	267,68	2,661,31
1860β/61α	269,104,50	96,59	2,786,05	10,975,45	34,64	316,84	3,102,89
1861β/62α	181,487	86,16	2,106,39	15,953,58	30,9	516,3	2,622,69
1862β/63α	5,699,05	89,57	63,63	7,202,58	32,12	224,24	287,87
1863β/64α	43,241,2	89,43	483,52	1,736,58	32,07	54,15	537,67
1864β	43,343,45	89,37	484,989	4,460,85	32,05	139,184	624,173

\* The output noted on 30.6.1858 corresponds to the whole of 1857 and the first semester of 1858, and is consequently larger than the annual one.

As can be seen in Table 5, the short-term cyclical fluctuation in silk prices was three-yearly (two years rise, one year fall), while the long-term upward trend, that had begun some time before the period being examined here, seems to reach its peak around 1860/61; in the last years (1862/64), the prices were stabilized at a reasonably satisfactory level, but which in no case corresponded to the crisis conditions created in Greece by the drop in cocoon production, as had happened during the 1850s with the collapse of French sericulture: the value of the output of small countries does not of course affect prices at an international level.

We can now calculate approximately the volume of production (Table 6), on the basis of the mean annual prices for silk.<sup>86</sup> It is obvious that the Athens silkmill never operated at maximum capacity.<sup>87</sup> Only in 1856 did the output of about 8,200 kilos approach the lower of the limits mentioned above. From the following year it began to fall steadily, to complete its cycle in 1859/60, that is before the cocoon disease became widespread, at the level of 2,660 kilos. The brief recovery in 1860/61 proved short-lived, and in the following year output decreased once again. It was virtually nil in the period 1862-1864, when pébrine destroyed the greater part of the cocoon production. If we exclude the year 1856 and the period of crop failure 1863-1864, the annual output ranged roughly from 2,700 to 4,000 kilos, that is it corresponded to 47 to 70 working days of 10 hours (or 2-3 months), according to the averages mentioned. In other words, large as the factory was, it was essentially operating below capacity.

86. For 1855 and 1856 the prices in Table 5 are taken unaltered. After that, the accounting year no longer coincides with the calendar year; furthermore, it seems that the agents in Lyons did not pre-purchase the output at predetermined prices. On the contrary, there are convincing indications that the selling prices followed the fluctuations of the market: In September 1856 Durutti mentions 'the last price-list from Lyons of the 10th inst.', see *Καθ' ἡν στιγμήν...*, op. cit., 16. Since any other method of levelling would be arbitrary, I have decided to take the mean of the prices of the pair of calendar years corresponding to each fiscal year.

87. I wish to make it clear that I avoid 'rounding off' the numbers because this introduces an additional arbitrary factor that makes the verifications more difficult. However, in no case does this mean an analogous degree of accuracy at a level of decimals.



TABLE 7  
PRICE OF COCOONS, 1855-1864

Production period	Silk (kilos)	Cocoons required (kilos)	Value of cocoons consumed <sup>1</sup> (drs)	Mean price (drs/kilo)	Year of harvest
1855	3.996,162	17.155,54	220.241,96	12,8	1854/55
1856	8.201,055	35.227,09	561.679,96	15,9	1855/56
1857/58α	5.974,86	25.374,28	684.133,09	27	1856/57
1858β/59α	3.621	15.536,94	209.068,55	13,5	1858
1859β/60α	2.661,31	11.415,32	201.210,11	17,6	1859
1860β/61α	3.102,89	13.304,92	242.093,17	18,2	1860
1861β/62α	2.622,69	10.971,9	186.141,54	15,5/17 <sup>2</sup>	1861
1862β/63α	287,87	1.019,96	—	—	1862
1863β/64α	537,67	2.306,18	29.120,39	12,6	1863
1864β	624,173	2.593,26	47.124,35	18,2	1864

1 In 1855 and 1856 the value of consumed cocoons appears in the 'Operating results' (sum of the two harvest 1854/55 and 1855/56 respectively). For the following years, I considered that the harvest of the year corresponds to the silk production of the same accounting year (e.g. the 1859 harvest corresponds to the 1859/60 silk production).

2 The lower price is arrived at if we reckon in the 1862/63 output, given that the purchase of cocoons from the 1862 harvest does not appear in the balance sheets.

The fundamental problem of the Athens silkmill was cocoons. I have spoken elsewhere of this basic contradiction faced by the first branch of industry in Greece.<sup>88</sup> The cottage-industrial production of silk initially impeded attempts to set up factories. It later gave way, when demand abroad made it more profitable to export cocoons than silk, as happened in the 1850s on account of the protracted crisis in French sericulture. At the same moment, the now mass commercialization of the cocoon, together with the general rise in prices of all silk products that came in the wake of the crisis, made the creation of factories a feasible and attractive prospect. But these factories had to deal with an almost insoluble problem: the high price, or otherwise the rarity, of their raw material, on account of exports. The Athens silkmill offers us a rare opportunity to examine in depth these problems and their confrontation.

One basic parameter in this investigation is the price of the cocoon, for which the company balance sheets unfortunately offer hardly any indication. They do however give the value of the cocoons purchased from each harvest.<sup>89</sup> So we shall endeavour to gauge their mean price, by calculating first the volume of cocoons that corresponds to the output of each accounting year, on the basis of the datum that the volume ratio of cocoons/silk was 4:1 (Table 7).<sup>90</sup>

The course of cocoon prices shown in Table 7 renders quite satisfactorily the developments in this market, as known from other sources:<sup>91</sup> from 1855 to

88. Χρ. Αγκριαντώνη, *Οι απαρχές της βιομηχανίσης στην Ελλάδα τον 19ο αιώνα* [Chr. Agriantoni, *The beginnings of industrialization in 19th-century Greece*], Historical Archive - Commercial Bank, Athens 1986, 37-40, 72-73.

89. In the assets accounts headed: 'Allowance for cocoons for... [year of harvest]'. In 1855 and 1856 the amount consumed is distinguished (in 'Operating Results') from the stocks (in the assets of the balance sheet). In the following years, since there are no longer 'Operating results', all the accounts for cocoons, always separate for each harvest, are transferred from one balance to the other.

90. This ratio was applicable to fine silk. For coarse silk a ratio of 3:1 was estimated, while a further 10% was added to the total for noils. In the 1855 balance sheet the volume of 'perforated' cocoons is noted (1,000 okas), which does indeed represent about 10% of the volume calculated here.

91. The fluctuations coincide with those given by the data on cocoon exports in the period 1857-1866, despite the doubtfulness of these data, see Α. Δόσιος, *Περί βιομηχανίας εν Ελλάδι* [L. Dosios, *On industry in Greece*], Athens 1871, 65. Of course the prices estimated here correspond to payments by the silkmill and not to prices in the places of purchase. In a despatch invoice for cocoons, now in the Chr. Zioulas Collection, dated 11.7.1871 (of D.A. Leontaritis), it seems that there was a surcharge of 2.3% on the buying price from the local supplier, for selection, packing and transportation, and a further 2% commission was added to the total.

1857 prices increased dramatically on account of the great demand caused by the disaster in French sericulture. After the 1857/58 recession, that accompanied the commercial crisis of the period,<sup>92</sup> prices recovered, to remain at relatively high levels from then onwards, while from 1860 the disease spread, destroying the greater part of the production in 1861-63.<sup>93</sup> (Our prices for the harvests 1862-1864 are hardly representative since they correspond to now negligible quantities). Even so, our calculated mean price for the 1856 and 1857 harvests (27 drs/kilo) gives the impression of a serious anomaly within an otherwise 'normal' fluctuation;<sup>94</sup> the situation is here complicated by the fact that the productive period (1857/1858a) corresponds to a year and a half, and coincides with the change in the accounting system, while we also have a serious accounting irregularity.<sup>95</sup>

Of all the hypotheses that can be made about these anomalies, the most plausible is that part of the 1856, and the 1857, harvest was not processed into silk but exported as cocoons. This does not appear explicitly in the balance sheets, but is inferred by other indirect evidence.<sup>96</sup> On the basis of this evidence, the volume of the export is estimated at approximately 19,500 kilos, and consequently the mean price of the 1856/57 harvest can be 'adjusted' accordingly: it will have been about 20 drs/kilo, again a high price which, since it is an average, was even higher seasonally. The fact that the income from these exports does not appear in the balance sheets does not necessarily mean intentional concealment; as we shall see, the balance sheets are not particularly accurate and systematic. In any case Louis Roeck had clearly stated the relevant 'threat' in a memorandum to Queen Amalia in February 1857: 'The Athens Company', as he wrote then, 'with its powers exhausted is forced to deprive the poor girls of Athens of work, to send all its cocoons to France and to shut down the silkmill, until it pleaseth the government to settle this serious issue [i.e. increase the export duty on cocoons]. Demoted to the profession of merchant, the Société will earn more money, and perhaps then the gentlemen deputies will realize that through their indifference they took away the bread from 300 poor families in Athens in order to increase the profits of a few merchants'.<sup>97</sup>

The silkmill did not close down, but the industrial firm was indeed transformed, albeit temporarily, into a commercial one, when the cost of its raw material rose beyond a tolerable level. It is this ascertainment that interests us here. What was that tolerable level? Table 7 indicates a 'ceiling' of around 20 drs/kilo. Obviously the limit depended on the prices of silk. Until 1860 at least, the prices of cocoons followed the prices of silk, that is the demand abroad, whereas at the end of the period the singular home circumstances of the reduced production seem to have disengaged the two values (although our evidence for this period is very limited and unreliable); on the other hand their difference (calculating quadruple the price of cocoons) shows fluctuations critical for the profit margins of the silkmill, from 16 to 32

92. Durutti referred to this 'crisis' at the 1862 general meeting, see Chr. Zioulas Collection, Minutes of meeting 21.1.1862.

93. See on all these subjects, M. Ρηγινης, *Η οικονομική ιστορία του μεταξίου. Από την περιφέρεια της Ευρώπης στη περιφέρεια της Ελλάδας* [M. Riginos, *The economic history of silk. From the provinces of Europe to the provinces of Greece*], in *Η σερικουλτούρα στο Σουλφί* [Sericulture in Soufli], Cultural Foundation, ETBA, Athens 1992, 15-69.

94. The highest price located in the sources is that mentioned by Durutti himself in his memorandum of September 1856, and he had reasons for exaggerating: the price of cocoons had then risen to 30 drs/oka or 23.4 drs/kilo, while the prices in Marseilles ranged between 26 and 28 francs/kilo (*Καθ' ἣν στιγμήν...*, op. cit., 33).

95. In the balance sheet for 31.12.1856 the sum of 254,606.1 drs appears as a balance (stock) of the 1856 harvest, whereas the same account in the balance sheet of 30.6.1858 records only 75,868.51 drs. In other words part of the 1856 harvest which had not been consumed by the end of the year and which does not appear anywhere hence forth, is missing.

96. From 1858 the account 'cocoons to Souchon' (i.e. to Lyons) appears, but this includes small sums that do not justify export of cocoons on such a scale; the indirect evidence for this is in the liabilities for 1858 and 1859, where the debts to the Customs at Piraeus are entered analytically: the company evidently owed sums for 655 packages of cocoons (*in toto* and for two years). An average weight of about 30 kilos per package is deduced from all the entries, which means that duty was paid on an overall volume of 19,650 kilos of cocoons. It is thus clear that these were exported, because for transport in Greece only municipal taxes were paid and not customs duties.

97. GSA, Otto Archive, Ministry of Interior, file 252, L. Roeck to the queen, Athens 21.2/5.3.1857 (in French).



**TABLE 8**  
**ANALYSIS OF PRODUCTION COSTS, 1855-1856**

Accounts	1855		1856	
	Total (drs)	per unit (drs/kilo)	Total (drs)	per unit (drs/kilo)
Labour <sup>1</sup>	17.408,5		31.157,2	
Fuel <sup>2</sup>	6.309,64		14.193,30	
Maintenance and running <sup>3</sup>	5.910,37		12.026,08	
Postal charges <sup>4</sup>	5.017,58		9.785,69	
Total production cost (a)	34.646,09	8,67	67.162,27	8,19
Salaries of factory staff	9.349,97		12.831,64	
Manager's salary	6.000		6.000	
Office expenses and miscellanea <sup>5</sup>	1.077,12		5.224,76	
Total of general expenditure (b)	16.427,09	4,11	23.898,25	2,91
Taxes and duties <sup>6</sup> (c)	2.684,31	0,67	2.288	0,28
Interest (d)	8.501,77	2,13	12.376,45	1,5
TOTAL (a+b+c+d)	62.259,26	15,58	105.724,97	12,88
Depreciation <sup>7</sup>	12.160	3,04	12.160	1,48
Mixed cost	72.419,26	18,62	118.884,97	14,36
Cocoons	220.241,96	55,11	561.670,96	68,41
COST PRICE	282.501,22	78,31	668.395,93	89,93

1. The accounts 'Reelers wages' and 'Expenditure on reeling coarse silks'.

2. The account 'Coal from Kymi'.

3. The accounts 'Expenditure on maintaining the factory', 'Expenditure on the steam engine', 'Cocoon selection', 'Burlap, ropes and string' and 'Smithy'.

4. The accounts 'Expenditure on despatching silks', 'Expenditure on despatching coarse noils' and 'Postal dues'.

5. The accounts 'Office expenses', 'Miscellaneous expenses of the factory' and 'Expenditure of the Silkmill'.

6. During the first two years, 'Athens Hospital tax' and 'Fire insurance dues'.

7. 8% of the fixed capital.

drs, if we limit ourselves to the period up until 1861.

Analysis of the cost of production in the first two years (Table 8) indicates that the contribution of cocoons to the cost price was over 70%, while the net production cost (8.2-8.7 drs/kilo), together with the general expenses, taxes and interest, reached 13-14 drs.<sup>98</sup> If we add the depreciation (which was not taken into account in the balance sheets), we reach a mixed cost of 14.4-18.6 drs, without reckoning any profit. Consequently, Durutti rightly considered the purchase of cocoons unprofitable when their price exceeded 15 to 20 drs, given that the prices of silk usually ranged between 80 and 100 drs/kilo. This is the reason why he had already begun his struggle to have the export duty on cocoons increased, in February 1855, when their price was over 15 drs.<sup>99</sup>

98. This analysis is not possible for the following years because the accounts correspond to the mixed productive activity of the business. In Table 8 the reduction to unit is based on the total output (fine and coarse silk), because it is not possible to break down the various bills and expenses. The deviations from the cost of fine silk are negligible because in both cases coarse silk represents less than 10% of the total. It should be remembered that the participation of the cocoon in the value of the product was estimated at around 80% in traditional reeling too, see R. Tolaini, An Italian silk firm on the international market: the Scotis di Pescia (1815-1860), *Textile History*, 25 (1994), iss. 1, 80.

99. We should remember that the price of 12.8 drs/kilo, cited in Table 7, is the average for the 1854 and 1855 harvests.

Faced with this tug-of-war, Durutti had two options. He applied the first in 1857, when, having bought cocoons at high prices, perhaps above 20 drs/kilo for some batches, he chose to export them, since silk prices were not moving correspondingly. The second option, which seems to have been of longer duration, was not to buy cocoons when their price went beyond the critical limit: 'I have an order from Mr Ath. Durutti to procure for him cocoons that will cost him dry, with all the expenses, 20 drs an oka [=15.6 drs/kilo]', wrote Sp. Alexandrakis from Kalamata to M. Iatros, in June 1860, when the current prices were 27-28 drs,<sup>100</sup> and for this reason '... I till this day have not made any purchase for your silkmill in Athens...'.<sup>101</sup> It seems that in the end Durutti did buy at higher prices that year: 18.2 drs/kilo, on average, according to our calculations, perhaps because the price of silk reached 110 drs. Early in September, however, when Alexandrakis assured Iatros that he had agreed with Poulakos from Sparta to buy a batch of 579 okas, on behalf of Durutti, 'the current price of cocoons is 24 drs [=18.7 drs/kilo]...'.<sup>102</sup>

Evidently Durutti finally made marginal purchases, either in places with lower prices (Andros, for example) or at the end of the season, when cocoon prices were falling or silk prices forming at reasonable levels. But this brought him up against a new problem: he could not find enough cocoons, which explains the drop in the silkmill's output and the consequent rise in the cost of production per unit (see the comparative cost for the years 1855 and 1856 in Table 8).

A large industrial unit that does not make economies of scale is bound to have problems. In general, with such marginal potential, silk-reeling was not viable as a self-sufficient industrial enterprise. It was only viable as a supplementary activity of basically commercial enterprises involved in diverse transactions with the rural world, in close proximity to it and using alternatively its casual and seasonal workforce. Such was the case of the Fels & Co. silkmill and of other businesses in Kalamata, Sparta and even Patras: 'In our days cocoons are bought for the present by the German house of Fels, by the Frenchman Alex. Fournaire, Aristides Pantazopoulos, Ioannis Stoumbos and Demetrios Sklaveas...', wrote Spyridon Alexandrakis in June 1860, precisely when he himself could not purchase on Durutti's behalf. We do not know whether Durutti participated personally (or in collaboration with Iatros) in the export trade of cocoons. In any case the Société Séricicole does not seem to have repeated the export experiment of 1857, at least on such a scale.

The equipment of the silkmill itself was also utilized in another way. The company balance sheets show that after 1859 the factory undertook the reeling of silk for third parties.<sup>103</sup> We reckon from the related income that this work employed the silkmill (at full capacity) for one month at the most. This was not enough either and after 1865, when Durutti was sole proprietor of the silkmill, he drastically reduced its equipment, which remained out of action

100. MIA, vol. IX, file 1048, 14.6.1860, Alexandrakis (Kalamata) to Iatros (Nauplion). The fact that the cocoons were bought dry was not without consequences. Correct dessication was important for the quality of the cocoon, therefore lack of control (mainly through timely pre-purchasing) of producers or intermediaries who carried out this process also meant an inability to monitor quality. For this reason the reelers of Tuscany, for instance, bought fresh cocoons as early as possible, and dried them themselves, see R. Tolaini, op. cit., 81.

101. MIA, op. cit., file 1050, 19.6.1860, Alexandrakis to Iatros.

102. Ibidem, file 1074, 2.9.1860, Alexandrakis to Iatros.

103. In the balance sheet of 30.6.1860 the account 'Reeling of silks' appears in the liabilities (income). That it concerns this kind of work is confirmed also by comparing daily wages with the volume of production, which do not develop in parallel after 1860. This account (cumulative) develops as follows (after the necessary subtractions):

Year	'Reeling of silks'
30.6.1860	10,660.79
30.6.1861	8,398.95
30.6.1862	12,843.55
30.6.1863	20,689.15
30.6.1864	420.4
31.12.1864	-



for years. In 1873 there were only 132 of the original 240 basins in the silkmill; part of the rest was perhaps sold to provincial silkmills or dissolved, while 16 basins were transferred to the silkmill at Sparta which re-operated for an interval.<sup>104</sup> So Durutti was led where silkmills in other countries had been led much earlier, that is out of the urban area into the silk-rearing countryside.

Improving the product, restructuring production and 'verticalization' were another possible way out. Although Athens silk was significantly better than cottage-industrial silk, it did not command the highest prices for its class ('soie grège', that is untwisted thread) in the Lyons market, and naturally was not to compare with the ready yarn of the French and Italian spinning mills. At an early stage Durutti seems to have tried to produce lightly twisted silk, with some 'twisting machines',<sup>105</sup> while the production of yarns ('*organsins et trames*') appears in the 1864 balance sheets, in a separate account, as a small part of the whole. This attempt, especially difficult and with very little chance of immediate success, at least, must have been further exacerbated by the conditions of Greek sericulture, which did not offer choice and, more important, clearly distinguished qualities; these conditions deteriorated once the disease broke out.<sup>106</sup> It is characteristic that in the period 1862-64 the ratio of coarse silk in the overall output of the silkmill was appreciably higher, perhaps because of the fall in the quality of the cocoons.

Towards the end of the period examined here, Durutti tried to expand into silk-weaving. By 1863 he had already installed a loom in the upper storey of the large hall, where he 'tried to make velvet, and the outcome surpassed all expectations...' <sup>107</sup> However, the venture does not seem to have progressed beyond the experimental stage.

From exporting cocoons to reeling for third parties and attempting to produce yarns and textiles, the course of the Athens silkmill bears witness to an effort to come to grips with a purely industrial task, despite the adversities. Silk-reeling, now on the wane, was essentially replaced by flour milling, which gave a significant reprieve to the factory's life, until the crystallization of the economic traits of the new sector, with its concentration in the major ports, also expelled this industrial activity from the capital.

### **'Greece has a greater need of production than of industry...'**

The appearance of the silk-reeling industry in Greece in the 1850s brought to the fore the issue of what economic policy should be followed regarding industrialization, until then largely a theoretical question. The Athens silkmill, and Athanasios Durutti in particular, played a central role in the associated discussion, which is of seminal interest since it was the die in which all

104. See Chr. Zioulas Collection, Durutti letter July 1873. Reduction in the number of basins must have begun in 1865 and was completed in 1867, see Chr. Zioulas Collection, untitled, undated and unsigned description of the factory, with the indication '1869' on the first page (henceforth: Description 1869), which mentions 136 basins in the silkmill at the time.

105. They appear in the balance sheets (assets, equipment) from 1856. In the Lyons market 'Eastern silk' was titled 11/13, while the finer Italian silk, 10/11 (3-4 filaments in the thread) and top quality French silk, 8/12. It is possible that the silk of the Société Séricicole was closer to the traditional Eastern type, although it was certainly finer and more even.

106. On the chaotic situation in the egg market and the varieties at the time, see Φωκίωνος Β., Σχολητροτροφία [Fokionos V., Rearing silkworms], Πανδώρα, iss. 12 (1861-62), iss. 268-271. The author of this series of articles reveals that the Kalamata silkmills (had made similar attempts to produce *soie filée* (silk yarn), but without success.

107. Μ.Π. Βρετού, *Εθνικόν Ημερολόγιον...*, 1864 [M.P. Vretou, National Diary... 1864], op. cit. The loom is not mentioned in the Notification of auction 1865, while in the Description 1869 we read: '... above the storeroom of the bakery [at the southwest edge of the complex] is the weaving shed for silk and various weaving tools which are at present out of use'.

subsequent views on industry were cast, and which to a considerable degree determined its fate.

Confronted with the aforementioned difficulties in the cocoon market, A. Durutti wrote three successive memoranda on this matter: the first was addressed to the Ministers of the Interior and Finance, in February 1855, while the second and the third to the Ministerial Council, in November 1855 and September 1856 respectively.<sup>108</sup> In essence he made three requests: to increase the export duty on cocoons, to allow free import of cocoons from abroad, and to exempt silk exports from taxes. At that time the export duties were 0.60 drs/oka on cocoons and 1.5 drs/oka on silk.<sup>109</sup> However, cocoons were naturally his prime concern. He based his argument on the premiss that 'in a newly-founded state every industrial enterprise [...] requires the support and protection of those who govern'. This view, systematized theoretically by Frederick List, was fundamental to economic thinking and policy in the nineteenth century. Citing examples from a host of European countries, Durutti directly linked the success of the 'new-born industry' with these measures, yet making it quite clear that he was not seeking 'privileges or exceptional orders' but 'simply the application of the laws': he claimed that after the large increase in the price of cocoons their export duty no longer represented 6% of their value, which was the usual basis for calculating export duty on all commodities.

It is obvious from the content of these memoranda that Durutti was following closely the discussions held at government level and was informed on the proposals being circulated: as we have seen, the Société Séricicole had contacts with politicians, the palace and influential persons. So, in his second and third memoranda Durutti was obliged to develop arguments in support of his claim 'that the interest of the Société Séricicole was identified completely with the well-intended interest of our entire society', expressed axiomatically as 'self-evident' in his first memorandum: this axiom was in reality a moot point for Greek society, which was already facing –and would continue to face for many years– the dilemma: agricultural or industrial development, without managing to give a clear-cut answer.

The issue was eventually discussed in Parliament, in October 1856, when Alexandros Koumoundouros, Minister of Finance from July of that year, introduced an emergency bill increasing the export duty on cocoons from 0.60 to 0.70 drs/oka and exempting from tax the export of silk reeled 'in the Italian and the French manner'.<sup>110</sup> Koumoundouros acknowledged that the proposed increase was insignificant (16.7%): 'the addition of 10 lepta could not possibly harm the producers, because today the cocoon is priced at 40 drachmas an oka, whereas the duty is determined at 60 lepta, estimated on a price of only 12 drachmas. But although the increase in tax is so insignificant, it contributes at the same time to supporting the factories...'.<sup>111</sup>

The Minister of Finance's proposal was in fact contrary to his deeper

108. All three were published in the pamphlet *Καθ' ἡν στιγμὴν...*, op. cit.

109. *Καθ' ἡν στιγμὴν...*, op. cit., 8. On the development of taxation and export duty until the early 1850s, see Γ. Μητροπάνης, *Η φορολογία της αγροτικής παραγωγής στην Ελλάδα, 1828-1862* [G. Mitrofanis, *The taxation of agricultural production in Greece 1828-1862*], PhD thesis, University of Athens (Department of Political Science), Athens 1992, 184-198.

110. The bill was submitted to parliament on 16 October 1856; it was discussed and voted on two days later, 18 October; see *Πρακτικά των Συνεδριάσεων της Βουλής* [Proceedings of the Sessions of Parliament], Third Session, Fourth Parliamentary Period, vol. 3, Athens 1856, 1313-1314 and 1332-1342, from where all the excerpts are taken.



philosophy. Koumoundouros was an advocate of free trade, and indeed in the most archetypical *laissez-faire* version of Adam Smith's liberal theory, that considered the 'invisible hand' automatically beneficial to all. For him there were no conflicting interests: 'What benefits the primary producers [...] is the over-pricing of cocoons and silk [...] the factories, by provoking competition, contribute to the over-pricing...'. This legitimized a priori the support of the factories. Nevertheless, Koumoundouros was not dogmatic; moreover, in his heart of hearts industry meant a higher stage of development: 'Why should Greece produce only unfinished and primary products? Until when shall we be in that archaic state [...]? [I] on the contrary embrace the new era, in which nations should process and perfect their products, not only for reasons of prestige but also of interest...'. So, despite his convictions, he agreed to make a small concession in the direction of protectionism, because industry had to face hard European competition: 'In Europe [the industrialist] pays 4% [interest...] In Europe they have available machines [...] In Europe there are mechanics [...] In Europe the daily wages are much lower [...] So how do you expect the factories in Greece to compete with those of Europe?'.

Here Koumoundouros followed A. Durutti's arguments, with which he was conversant not only from the memoranda. His relations with Constantine Durutti, which are documented at least from the 1870's, probably date from much earlier.<sup>111</sup> When asked in parliament why he was rushing through measures on silk and cocoons although he had introduced the customs bill not long before, he was characteristically evasive; whereas he had mentioned specifically 'two industrial factories, of K.K. Rallis and Durutti' in his opening speech, Koumoundouros hedged the issue in his second one, referring only to the proposals of some merchant from Andros.<sup>112</sup> But personal relations and mutual services could overcome neither the dominant currents in political thinking nor the constraints placed on the politician by the balance of power – the overwhelming weight of the agricultural sector, and indeed in a period in which the great current crisis was still imminent.

The objections raised in parliament to Koumoundouros's proposal did not concern so much the issue of 'liberalism or protectionism', as the dilemma 'agricultural production or industry'. Though limited, they certainly echoed more widely held views. Objections were mainly raised by certain deputies from Lacedaemonia, as was to be expected, and by the University deputy, Spyridon Pilikas. This conservative lawyer expressed archaic views – even for Greece at that time – of a physiocratic hue, declaring that 'Hellas will flourish only through [agricultural] production and not through industrial factories'.<sup>113</sup> But the basic argument of all who spoke, that the protection of agricultural production had priority, as well as the general doubting of the expediency of industry, which was again expressed by Pilikas,<sup>114</sup> were views repeatedly supported by the press:<sup>115</sup> the conviction that Greece was 'naturally' an agricultural and nautical country, was to show great resilience to time.<sup>116</sup>

111. In 1872 C. Durutti had received a loan from the National Bank, with surety from Koumoundouros and registration of a mortgage on land-holdings of the latter, which fact bears witness to very close relations. During the period 1879-1881, Spyridon and George Durutti, sons of Athanasios and heirs of their uncle Constantine, who had died without issue, still kept a book account with Koumoundouros (they discounted bills of exchange of his acceptance in the General Credit Bank). In other words, it seems that Constantine Durutti was somehow the private banker of Koumoundouros, who in any case died up to his eyes in debt: 'The Bank is aware of the great debts we inherited from our father', wrote Koumoundouros's sons to the National Bank of Greece after their father's death. The relevant documents are in the ΙΑ/ΕΤΑ, Χ/ΙΔ ('Bonds'), file 41; the excerpt is from a letter from Koumoundouros's sons to the National Bank of Greece, dated 1 November 1884.

112. 'A merchant from Andros [...] intends to set up a silk-spinning factory on Andros, but is prevented [...] as long as such advantages are not given to the factories in Greece [...]'. So this is the reason why [I] am obliged to hurry [...] since it concerns the acquisition of a new industrial factory.'

113. Koumoundouros answered: 'I really wonder how the University deputy wants to separate [agricultural] production from industrial factories'.

114. 'Progress and prosperity of the industrial factories does not mean progress and prosperity of society', Pilikas said; this phrase perhaps echoes the ideas of Sismondi, whom Pilikas must have heard when studying at the University of Geneva, see *Απομνημονεύματα...* [Memoirs...], op. cit., 5 (Editor's preface).

115. The newspaper *Φλόγα* had already replied to Durutti's memoranda on 6.10.1856, supporting the export of cocoons. Similar views in B. Φωκίωνος, op. cit.

116. See in connection Χρ. Χατζηιωσήφ, *Απόψεις γύρω από τη βιοσιμότητα της Ελλάδας και το ρόλο της βιομηχανίας, Αφιέρωμα στον Νίκο Σβορώνο* [Chr. Chatziosif, Views concerning the viability of Greece and the role of industry, Festschrift for Nikos Svoronos], University of Crete, vol. 2, Rethymnon 1986, 330-368.

So, even though the bill was passed in principle by 73 votes for to three against, with one abstention,<sup>117</sup> in the clause by clause debate, Koumoundouros, willing to temper impressions, at once accepted the amendment to remove the specification that only silk reeled ‘in the French and Italian manner’ be exempted from export duty, so that the measure would also benefit cottage-industrial silk-reeling. Such balancing acts could not lead to measures particularly favourable to the industry.<sup>118</sup> Moreover, even these deficient measures were temporary. The customs tariff voted on a little later in 1857, oriented toward the full liberation of exports, adopted the gradual decrease of all export duties by 20% every two years, so that they would be abolished completely within ten years (article 5).<sup>119</sup> According to this regulation, in 1861 the duty on cocoons had dropped to 0.42 drs/oka.<sup>120</sup>

Not long after, in 1863, on the pretext of another discussion in the IInd National Assembly concerning the change in the system of collecting the land tax on cocoons,<sup>121</sup> Pavlos Kalligas, then deputy for Attica, expressed more clearly the conflict of interests that Koumoundouros did not want to accept: ‘I know that two opposed interests have been clashing for many years, the interest of sericulture and the interest of the silk-reeling factories...’. Kalligas wished to be conciliatory: ‘...I think that we must compromise the interests on both sides...’, yet at the same time stating his preference for the norm of the majority: ‘Considering the large numbers involved with sericulture, I say that the interest of the silk-rearers is greater’. Koumoundouros, once again Minister of Finance, insisted in his ideas: ‘Mr Kalligas is misled [...] No, Gentlemen, sericulture is developed [...] since the cocoon<sup>122</sup> is priced [...] at 15 and 20 drachmas per oka [...] and the rise in price of the cocoon begins more or less from the period that factories also began to be set up in Greece, because the competition of purchasers thus increased. Consequently, the existence of the factories and in general the interests of the factories are not contrary to the interests of the silk-rearers...’. The small detail Koumoundouros forgot to mention, and that no one reminded him of, was that the ‘rise in price’ was not caused by the demand from factories at home, but abroad. On this front, however, he expressed himself more explicitly on this occasion: ‘If this tax<sup>123</sup> is imposed in order to reinforce the industrial factories... then a protectionist system will be established and... I am not in favour of such a system’. Indeed he put forward the argument that was to support later all analogous anti-protectionist views: ‘Of course [...] these factories have survived without this protection, and this is due to the genius of the managers, the thrift with which this work is executed. Because truly, Gentlemen, in Europe the expenses are much less, but a kind of waste unknown in Greece takes place there, as a result of which all the European factories that were to be built in Greece failed...’. The ‘thrift’, that is the limited percentage of profit and the low rates of accumulation, was precisely the mechanism that prevented industry from becoming the leading, dynamic sector of the Greek economy.

117. S. Piliakas, Stamatis Dokos, deputy for Hydra, and S. Kopanitsas, deputy for Lacedaemonia, voted against, while one other deputy from the latter province, E. Meletopoulos, abstained.

118. Already in his second memorandum, Durutti had made clear that he did not consider the increase in duty to 0.80 drs, then being discussed, sufficient and requested a generous increase to 1.50 drs, if not a total ban on exports.

119. Law of 10 June 1857, Official Gazette (*Εφημερίς της Κυβερνήσεως*), iss. 19/5.7.1857.

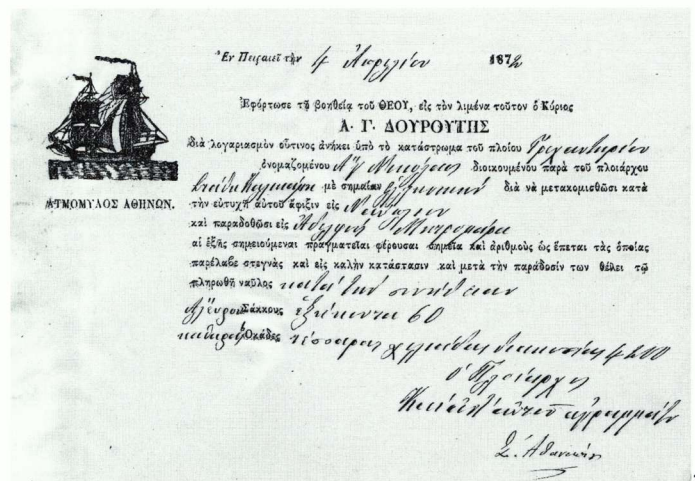
120. Relevant circular in the Official Gazette (*Εφημερίς της Κυβερνήσεως*), iss. 63/13.10.1861.

121. This tax (7%) was still collected by the system of renting (since 1851, see G. Mitrofanis, op. cit.). The proposal for changing the system and levying a fixed monetary tax, collected by the Customs Authority at the time of export, was submitted to the IInd General Assembly by the deputy for Kalamata, Konstantinos Dagres. See *Επίσημος Εφημερίς της Συνελεύσεως*, iss. 77-78, Session 95 on 6 May 1863, 613-621, from where the excerpts are taken.

122. In the original the word ‘βάμβος’ (cotton) is repeated, obviously a misreading from the shorthand minutes of the session, of the word ‘βουβός’ (= cocoon).

123. At that time the levying of a land tax of 1.4 drs/oka, to be collected by the Customs Authority, had been proposed; together with the export duty (0.42 drs), the total would have reached 1.80 drs, which sum Koumoundouros considered excessive. On the specific issue before the session, Koumoundouros was against changing the system of collecting the tax, arguing that every tax on exports constituted a restrictive measure for trade; he agreed, of course, that the system of renters was archaic, but maintained that the only solution was to establish a tax on acreage. In the end the issue was referred to the drafting of the taxation law.





7. Bill of lading of the 'Athens Flour mill', 4 April 1872. 60 sacks of flour (4200 okas) were loaded at Piraeus onto the sailing ship (trechantiri) the Aghios Nikolaos, skipper Stathis Kalikamis, destined for Nauplion; recipients the Mitromaras brothers, freightage 'the usual'. 15.5 x 20 cm. (Chr. Zioulas Collection).

Dominant Liberalism on the one hand, pro-agriculturalism on the other: the battle for social prestige (with which the 'waste' that Koumoundouros censured was articulated) was already lost for the industry, and perhaps this was more important than the lack of protection through export duties. It is in any case dubitable to what extent the Athens silkmill would have benefited from this protection, even though the crisis in the cocoon market was decisive for the first years of its life. Later, after 1866, with the recovery in sericulture and in more normal market conditions, the silkmills developed once again, but this time in the provinces and not in the capital.

### The 'Athens Steam Mill'

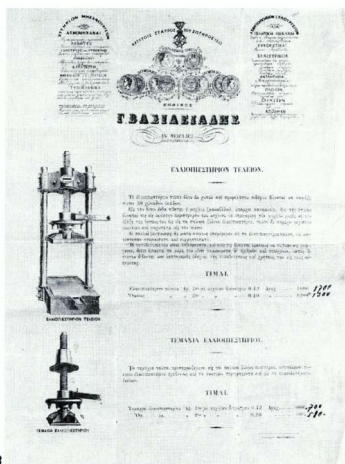
From 1860 the flour industry constituted the basic activity of the Athens 'silkmill'.<sup>124</sup> The company's 'balance sheets' yield information only on the level of the flour mill's net income, after the deduction of raw material and wages.<sup>125</sup> The development of the relevant accounts can be seen in Table 9.

As the Table shows, the flour mill began operating normally from 1860; the temporary fall in production in 1861/62 was perhaps due to new technical problems arising then, that demanded new repairs, as we have seen. A significant part of the income came from grinding on behalf of third parties: this began in the first year of trial operation and its share of the whole continued to increase. A long tradition of milling was continued in the factories, and indeed continues to this day.

The volume of the mill's output can only be estimated on the basis of scant and indirect evidence. All we know is that from February to December 1859

124. From a loose document in the Chr. Zioulas Collection (bill of lading dated 4.4.1872) it seems that the flour mill had acquired its own name, 'Athens Steam mill', and trademark, 'a sailing ship' (see fig. 7).

125. In the debit accounts under the heading 'Sale of flour', which from 1860 was renamed 'Profits of the steam mill' and 'Grinding costs'. On the movement in the 'Wheat forecast' account of the credit, it is clear that the same system was not followed here as in the silkmill, but that only the stocks (assets) and the net income (liabilities) were entered in the balance sheets.



**8. Advertisement sheet of the Vassileiadis machine shop (Piraeus), from the period 1871-1875. It advertises the illustrated oil press of cast iron, as well as iron parts that can be fitted to wooden presses. Bottom right: 'Ekatontcheiros Printers'. 40 x 30 cm. (Chr. Zioulas Collection).**

126. Chr. Zioulas Collection, loose document with indication 'Purchase of wheat for the steam mill from February to December 1859'; it gives the date (of the purchase or order), the volume and the price, the provenance and name of the merchant-seller.

127. From the 'Operating results' for 1856.

128. The possible combinations are given by applying wheat prices of 35 to 36 drs/oka and income of 4 to 7 lepta/oka.

129. Chr. Zioulas Collection, Durutti letter July 1873. At that time the mill still had six pairs of millstones, but the steam engine had been changed in 1869, with considerable savings on fuel.

130. These amounts appear in the assets of the 'balance sheets' from 1859 in a single account headed 'Debtors to the steam mill', without other clarifications (see here below, Table 10). Preserved in the Chr. Zioulas Collection are traces of the confiscation of a bakery, demanded jointly by A. Durutti and Amvrosios Vaphiadakis, as creditors, in 1866 (see decision 595/19.3.1866 of the Court of the First Instance, Athens). In the same archive there are counterfoils of invoices for the despatch and receipt of flour in 1865, from which it appears that the company sent flour to Kalamata.

131. Chr. Zioulas Collection, Description 1869: '... 2 bread ovens, not working at present, which are being used for storage'. Industrial factories 1874: the bakery 'is closed'.

132. Chr. Zioulas Collection, Durutti letter July 1873.

the company bought a total of 1,227,102.352 okas of wheat, mainly from Russia (Taigani), but also from Turkey and Syria.<sup>126</sup> The mean price for these purchases was 35.8 lepta/oka. We also know that the gross income for the first year (4,894.02 drs) corresponded to a purchase of grain worth 4,198.19 drs.<sup>127</sup> Lastly, we know that in 1873 Durutti reckoned the operating costs of the mill as 3 lepta/oka of wheat and the net profits (milling fees) as 4 lepta/oka. After processing this information in various ways we arrived at the numbers shown in the last column of Table 9, which indicate the minimum and maximum limits of consumption of raw material.<sup>128</sup> The steam mill evidently consumed some 1-2 million okas of wheat, which means that up until 1864 at least it was not working to full capacity, which Durutti reckoned in 1873 as 3-4 million okas.<sup>129</sup>

We have no indications on the way in which the business moved in the grain market. In the 1859 purchases 27 suppliers are mentioned, among them 4 sea captains and some of the leading grain merchants in Piraeus (N. Meletopoulos, Moutsopoulos Brothers, Mavros & Lambrou et al.), while brokers' fees representing 0.5% of the total value were paid. Nevertheless, none of these suppliers appears in the personal accounts of the company's balance sheets. The following analysis of the balance sheets suggests that Constantine Durutti mediated in the grain market: he was the best known merchant with the strongest financial credentials, who would have been allowed credit easily by the Piraeus grain merchants. On the other hand, the credit extended by the company to the buyers of flour—among them Athenian bakers and provincial merchants—<sup>130</sup> displays a pronounced upward trend, that bears witness to the widening of operations and clients, a widening which was, however, as we shall see, insufficient.

Vertical integration was also endeavoured in the flour mill. In 1866, after the dissolution of the Société Séricicole, a bakery with two ovens and a mechanical kneader was installed on the southwest side of the factory (see fig. 2). But the installation did not operate systematically and continuously: the bakery is known to have been closed at least twice, in 1869 and 1874.<sup>131</sup> Still on the outskirts of the capital, it is doubtful whether it could compete with the traditional bakeries of the city, while the mill too was burdened with costs for transporting the grain from the port.

Lastly, during this first decade of the Société Séricicole's existence, which mainly concerns us here, the oil press was set up too. Its activity was, however, marginal and irregular, judging from the company's balance sheets (see below, Table 16). Presumably it worked exclusively for third parties, keeping 'a percentage of oil as recompense for the work', according to a subsequent testimony of Durutti,<sup>132</sup> another long tradition that was continued into the factory system. The capacity of the oil press was doubled in the second half of the 1860s, with the addition of a further pair of stones and two new hydraulic presses, at least one of which might have been constructed by



TABLE 9  
INCOME OF THE STEAM MILL, 1856-1865

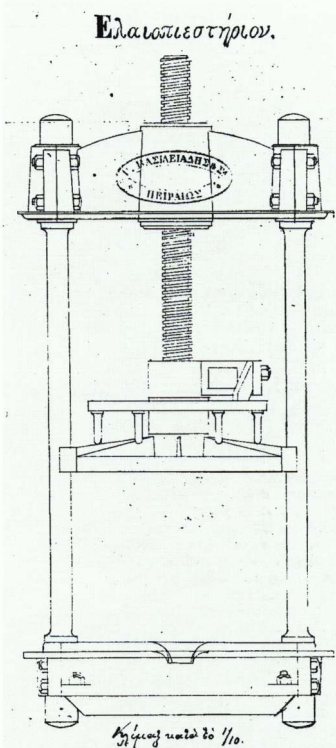
Date of balance sheet	Net income	Grinding fees (drs)	Total (drs)	Consumption of grain (million okas)
31.12.1856			108,86	
30.6.1858	2.003,19	—	2.003,19	
30.6.1859	5.153,35	13.983,49	19.138,84	
30.6.1860	68.593,72	14.196,73	82.790,45	1,2–2,07
30.6.1861	47.750,86	29.536,34	77.287,2	1,1–1,93
30.6.1862	26.842,14	12.363,06	39.205,2	0,56–0,98
30.6.1863	53.328,39	18.398,52	71.726,91	1,02–1,79
30.6.1864	43.885,35	51.551,3	95.436,65	1,36–2,38

the Vasileiadis machine shop.<sup>133</sup> In the same testimony Durutti states that the mechanical installation and the improved presses ensured better returns but not better quality oil, which in any case also depended on the quality of the olives, and consequently produced ‘oils of little value’. In other words, both units –the flour mill and the oil press– result of the firm’s reorientation towards the home market and staple products, did not leave significant margins of profit.

The ‘Balance Sheets’ of the Société Séricicole

The sole accounting evidence, intact and continuous, that has survived from the archive of the Société Séricicole is a book of account with the label on the cover ‘Balance Sheets of the Société Séricicole de la Grèce/From the year 1855 onwards’. It includes annual ‘balance sheets’ from 1855 until 1864.<sup>134</sup> The ‘balance sheets’ for the first two years (1855 and 1856) are dated 31 December, while the following ones, beginning from 1858, close on 30 June (consequently the ‘balance sheet’ of 30.6.1858 covers a year and a half). These are not of course true balance sheets in today’s sense, but a kind of recapitulation of accounts that do not obey strict rules and which mix up the annual balance sheet of a traditional trading firm with the inventory of property and the expense and revenue accounts of an industrial unit. More specifically, the ‘balance sheets’ include:

- a)Accounts that follow the logic of modern balance sheets, that is they record the balance, credit or debit, of the corresponding accounts in the (nominal) Ledger,<sup>135</sup> at the end of the accounting year. These are mainly the individual accounts of customers, of capital and fixed assets, and some of stocks.
- b)Accounts of expense and revenue, which normally belong to the Operating Results: purchases of raw materials, wages, running costs etc. in the assets, income from sales in the liabilities; in the first two years these said accounts are presented in a separate abstract, entitled ‘Operating Results of the Société



9. Drawing (elevation) of the oil press in fig. 8, that accompanied a letter from the Vasileiadis machine shop to Athanasios Durutti, 19.1.1867. At the bottom: ‘Scale 1/10’. 22 x 10.5 cm. (Chr. Zioulas Collection).

133. Chr. Zioulas Collection, letter from N.G. Vergos (p.p. G.Vasileiadis) to A. Durutti, 19.1.1867, with information on the prices of oil presses: 1,200 drs for the small, weight 800 okas, and 1,600 for the large, weight 1,000 okas.

134. Chr. Zioulas gave me photocopies of these ‘balance sheets’ and so I do not have a direct picture of the original. It was however a bound book in which the balance sheets are written in the classic manner (on the left assets - ‘Debtors’ -, right liabilities - ‘Creditors’), in continual flow and probably in the same hand, ‘calligraphic’ in the first two years, more hurried and untidy in the following ones.

135. All the accounts bear a number which must correspond to the page in the ledger. Indeed in one case (‘Results’ 1855) there is a relevant reference: p. 78 of ledger’. It should also be noted that the statutes of the company (article 21) stipulate the obligation to keep the company’s books with the double-entry system.

**10. Two pages from the accounts book of the 'Société Séricicole'. Dimensions of book 36 x 26 cm. (Photocopy, Chr. Zioulas Collection).**

136. 'The accounts show clearly that these factories were run by merchants for merchants', observes Alfred Chandler, *The Visible Hand. The managerial revolution in American business*, Cambridge Mass., 1977, 69-70, speaking about America in 1830.

137. Στεφάνου Αποστ. Παππά, *Σύντομος πραγματεία περί κατασχογραφίας και εμπορικής λογιστικής* [Stephanos Apost. Pappas, Brief treatise on book-keeping and commercial accounting], Athens 1855: improved and updated edition of the same work, *Εγχειρίδιον διπλογραφίας ή σύντομος διδασκαλία...* [Handbook on double-entry book-keeping or brief teaching...], Aegina 1831. The improvements concern the clarification of certain concepts (e.g. systematization of the inconsistent reference in the first edition to bills of exchange, bonds and 'acceptances' with the introduction of the generalizing concept 'monetary bills' - debit and credit), the introduction of new categories of accounts (e.g. arrears) and whatsoever clearer description of the balance and the inventory, with reference to the corresponding French terms (*bilan* and *inventaire*). On Greek commercial handbooks see Τσ. Σκλιφενίτης, *Τα εμπορικά εγχειρίδια της βενετοκρατίας και της τουρκοκρατίας και η εμπορική εγκυκλοπαίδεια του Νικόλαου Παταδόπουλου* [Tr. Sklaventitis, The commercial handbooks of the Venetian Occupation and the Turkish Occupation, and Nikolaos Papadopoulos's Commercial Encyclopaedia], EMNE, Athens 1991, 9-65. The assistance of Triantaphyllos Sklaventitis during my excursion into the commercial handbooks was of course invaluable, for which I thank him warmly.

138. Athanasios Psallidas calls the the balance sheet 'ζυγοστάθμια' see in connection Γ. Παπαγεωργίου, *Ο εκσυγχρονισμός του Έλληνα πραγματευτή σύμφωνα με τα ευρωπαϊκά πρότυπα (τέλος 18ου-αρχές 19ου αι.)* [G. Papageorgiou, The modernization of the Greek merchant in accordance with European models (late 18th - early 19th century)], Athens 1990, 83, 127, 150ff. and ibidem 176-177, with an example of a monthly 'ζυγοστάθμια'. See also S.A. Papa, *Εγχειρίδιον...*, op. cit., 62-66, and ibidem, *Σύντομος πραγματεία...*, (improved and updated edition) op. cit. 81ff.

Séricicole de la Grèce for the year 1855 and 1856', and are balanced for both years together. In the following years they are mixed in with the other accounts and are cumulative (that is sums of the previous balance sheet are carried over to the next). It should be further added that there is a difference in the entry system used for the silkmill and the flour mill: for the first the total expenditure for buying cocoons and income from selling silk pass into the balance sheet, while for the second only the stocks of wheat and the net income from the sale of flour are entered.

c)Accounts that are today included in the 'Profit and Loss' account: taxes, interest, share profits etc. These accounts are also cumulative after 1858, while in the first two years the majority have been included in the 'Operating Results'.

So it seems that in the beginning the managers of the Société Séricicole attempted, however imperfectly, that basic step which constituted the most important innovation in industrial accounting: calculating the cost price. We do not know why this practice was abandoned after 1858 – perhaps it was originally attempted on the recommendation of the French shareholders but the related 'know-how' was not assimilated. Nor do we know how the accounts office of the business was run; certainly one of the employees will have held the post of cashier and perhaps another executed the duties of the traditional secretary or clerk. What is most likely, however, is that Durutti himself played a dual role, of businessman and manager, a common practice among nineteenth-century industrialists everywhere.

Awareness of the need for accounting documents to render a new type of information, such as the cost price, its analysis for every kind of operation and the different sources of profit, was undoubtedly slow in coming, and only towards the end of the nineteenth century was the modern accounting system established and generalized in industry. In the middle of the century commercial logic still prevailed in the accounting of all businesses, even in the most advanced countries,<sup>136</sup> while in the most recent Greek commercial manual of the day (1855), the singularity of the industrial firm had seemingly not been realized.<sup>137</sup>

So there is nothing strange in the fact that in the mid-nineteenth century the Athens silkmill did not apply the latest accounting system of an industrial firm. What is striking, however, is that the know-how of compiling a classical balance sheet is absent, even though this was taught by all the commercial manuals of the day.<sup>138</sup> The overall picture presented by the 'balance sheets' of the Société Séricicole is one of nonconformity and disarray. The accounts are not arranged in logical sequence, their titles change, sometimes they are presented analytically and other times they are gathered in a single account, while it is obvious that these 'balance sheets' give absolutely no information on the company's financial situation. The overall level of assets and liabilities is overburdened with a double entry of the capital accounts,<sup>139</sup> there is no



distinction of the kind of assets or liabilities (short-term - long-term), no separate account is kept for arrears and, as we have seen, different practices were adopted for the company's various activities.

Aside from the personal weaknesses or, possibly, expediencies, we assume that this situation reflects the business customs of an age in which the necessity and practice of the annual balance sheet were not yet widespread, despite the instigations of the manuals. In any case, in the manuals themselves, at least the earlier ones, the 'bilan' is defined as 'a closing of all the accounts', mainly for the purpose of checking them,<sup>140</sup> and little emphasis is placed on its periodicity.<sup>141</sup> The commercial archives known and studied to date raise serious doubts about the extent to which Greek merchants of the period were applying the double-entry book-keeping method systematically.<sup>142</sup> Those who kept books of account would know empirically whether they were winning or losing by following their individual transactions, the cash-book and consequently the development of the 'profit and loss' account, provided they kept one.<sup>143</sup> Overall estimates of the financial situation of the business must have been made at intervals, mainly on the pretext of changes in the company format, that is each time it was required to calculate and to allocate the overall profit.<sup>144</sup>

A few random sheets from some book of account concerning the orchard of the silkmill convince us that Durutti kept detailed notes on each category of expenses.<sup>145</sup> All the accounts of the second category (expense and revenue) most probably come from corresponding analytical account books now missing. In the case of cocoons, for example, it is apparent that a separate account was kept for each harvest. Certainly the individual current accounts of those doing business with the Société Séricicole will have been kept meticulously –this was the most necessary tried and tested commercial practice–, while we have no indication of how the 'Profit and Loss' account was fed.<sup>146</sup> Both the manner of compiling the 'balance sheets' and Durutti's unwillingness to display them, as we shall see below, bear witness to the lack of system and strict periodicity: it is very possible that after 1858 *post hoc* 'balance sheets' were compiled. Lastly, the management seemed to rely more on carefully following individual transactions and business sectors, than on a comparative analysis of the input and output of a single enterprise, with estimation of the real (economic) cost of all its operations.

All this does not of course mean that Durutti was not aware of the state of the business. His awareness was, however, empirical and, more important, he had neither the general culture nor the technical background to enable him to 'objectify' certain relations and to handle concepts and sums with greater accuracy. This was also one of the reasons, and perhaps not the least significant, why the corporate scheme of the firm was ineffectual.

Despite their shortcomings, the 'balance sheets' of the Société Séricicole, after appropriate processing, do give us some picture of the business's

139. 'Capital' (304,000 drs) and 'Privately owned silkmill' (152,000 drs) in the liabilities, 'Athens Silkmill' (152,000 drs) and 'Shares representing the value of the factory no.1/152' (152,000 drs) in the assets.

140. See *Εμπορική Οδηγία ήτοι Ακριβής και σαφής διδασκαλία...* Trieste 1793, 53; the periodicity is not clearly specified here, although there is the sense that 'the balance indicates the state of all the merchant's transactions [...] what they will take in the future [...] what they have to give' (56).

141. In the handbook by Thomas Dimitriou, *Σκριπτούρα Δόπτια ήτοι Η τάξις των πραγματευτικών καταστάσεων*, Vienna 1794, 16, the 'Monthly Balance' is distinguished, the main aim of which is to check the analytical 'accounts' from the 'annual', which is 'a little difficult and only done once a year or when a company wants to be accounted perfectly' (my italics).

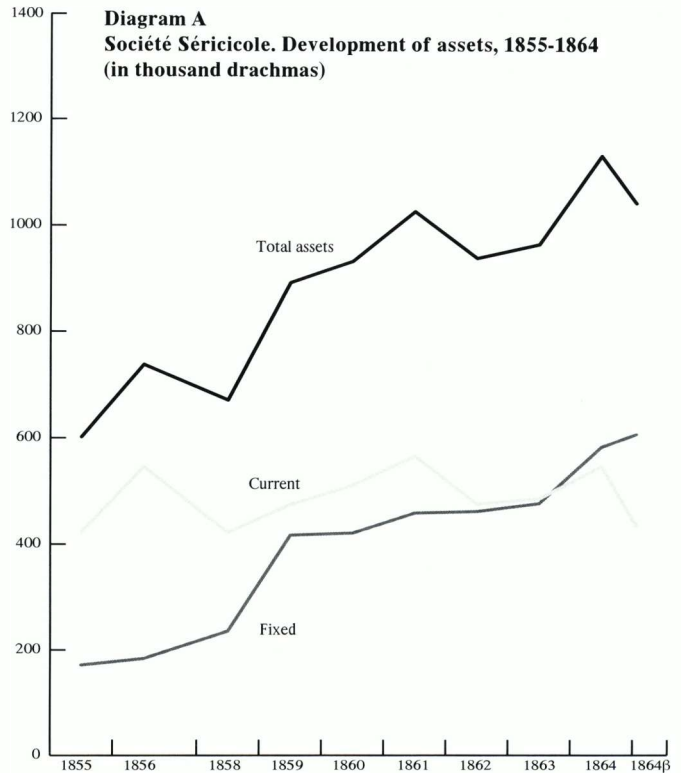
142. These archives usually include rough or 'Everyday' books, books of copies of letters and books of personal accounts with double entry, 'Give' and 'Take'. Such is the case of the Michael Iatros Archive, for example, in which no kind of 'balance' is found. In the archive of the Batis family, studied by B. Κρημνυδάς, *Εμπορικές πρακτικές στο τέλος της Τουρκοκρατίας, Μικονικές έμποροι και πλοιάρχες* [V. Kremmydas, Commercial practices at the end of the Turkish Occupation, Mykonian merchants and shipowners], Athens 1993, which has not survived intact, there is of course mention of the *'libro maestro dare-avere'* (16), though it seems that the 'clearances' or the 'balances' concerned specific transactions (such as a ship's voyage) or personal accounts, or the renewals of the company (see e.g. pp. 31, 55, 181-182). See also B. Κρημνυδάς, *Αρχείο Χατζιπαναγιώτη* [V. Kremmydas, Chatzipanayotis Archive], vol. 1, *Χατζιπαναγιώτης-Πολίτης* [Chatzipanayotis-Polititis], Athens 1973; this archive contains only journals for everyday transactions.

143. Account from the Ledger (Maestro), to which were transferred, theoretically at least, all the individual 'accounts', the profits (or losses) from commercial transactions, interest, 'provisions', from exchanges and monetary fluctuations ('profit of monies from the turnover of bills of credit', 'profit from the account of agio' etc.).

144. These are called 'Incomplete balance sheets' by Μαρία Χρυστίνα Χατζηκρίωννου, *Ο εμπορικός οίκος Γερούση από την οθωμανική αυτοκρατορία στο ελληνικό κράτος 1823-1870* [Maria Christina Chatzikoanou, The Gerousis trading house from the ottoman empire to the Greek state 1823-1870] (typescript PhD thesis), Athens 1989, 205.

145. These are leaves from an exercise book, in two copies, covering the period 1855-1863. The entries are dated and include a description of the task together with the sum of the corresponding outlay. From 1860 the entries are briefer: the only indication is 'for [number] daily wages'. The sum totals at the end of each year (cumulative) have been transferred *in toto* to the 'balance sheets', in the assets account 'Orchard of the silkmill'.

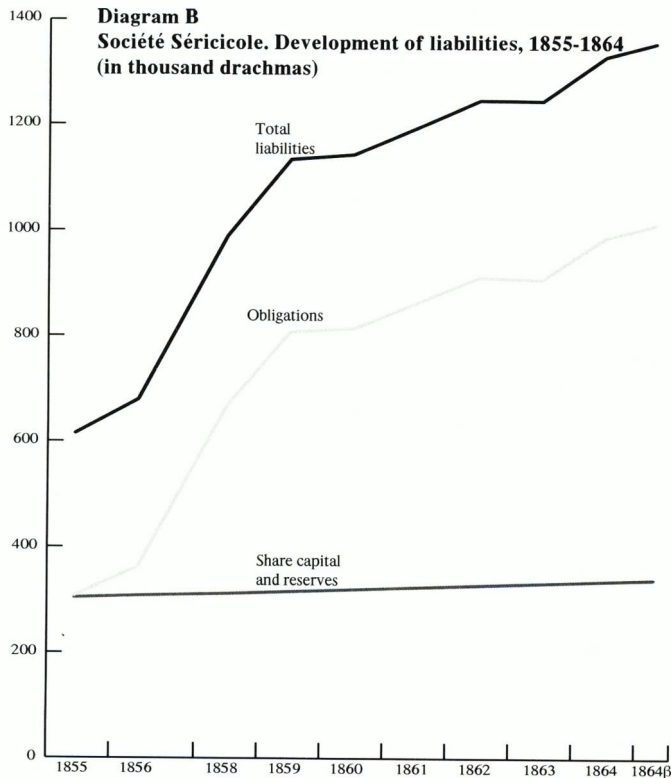
146. The account also appears under a different heading in the 'Results' and in the assets of the 1855 balance sheet. In the following years, for which, as we have said, there are no separate 'Operating Results', it appears in the assets (loss) of a 'Profits and Losses' account - with cumulative result.



development. In Table 10 the various accounts of the ‘balance sheets’ have been grouped together according to modern accounting principles. That is the accounts that truly belong to a balance sheet have been separated out from those of expense and revenue, and from the profit and loss account.

Table 10 and diagrams A and B clearly register the seminal problem of the Société Séricicole: the increase in assets was due almost exclusively to the increase in fixed assets and was not accompanied by an analogous expansion of operations (current assets). Correspondingly, the increase in liabilities derived exclusively from the increase in borrowed resources. In other words, the new investments were made exclusively with borrowed capital and did not stimulate a corresponding growth in the company’s activities. Its permanent state of deficit was the logical consequence of the above. The only balance sheet showing a positive balance of trade is that of 31.12.1856 – the only year in which the company showed a profit and paid its shareholders a dividend. All subsequent years show a negative balance ranging from 170,000 to 320,000 drs.





In reality, of course, the company's 'accounting' situation was markedly better, and this for the very simple reason that its fixed capital was undervalued in its 'balance sheets'. As we have seen, the silkmill was bought at a bargain price. For the new plots of land, the 'balance sheets' record their purchase price in 1855-56: but since then their value had increased. The 1860 'Valuers' Report' of Metaxas, Maniatis and Aravantinos assessed the overall value of the real estate property together with its machinery as 611,628 drs, while in the same period the balance sheet (30.6.1860) shows fixed capital of 421,000 drs. It seems that subsequently the value of the fixed capital was gradually adapted to these evaluations.<sup>147</sup>

However, the high real value of the fixed assets that enabled the Société Séricicole to survive, mainly because it ensured a high credit rating, did not alter the essence of the problem: the business was permanently loss-making, however insecure our numbers and however incomplete the various assets accounts (especially the stocks). The high and steadily rising participation of

TABLE 10

## BALANCE SHEETS OF THE SOCIÉTÉ SÉRICICOLE: DEVELOPMENT OF BASIC ACCOUNTS IN THOUSAND DRACHMAS\*

Accounts	12.55	12.56	6.58	6.59	6.60	6.61	6.62	6.63	6.64	12.64
<b>A. ASSETS</b>										
<i>1. Fixed assets</i>										
Buildings and machinery <sup>1</sup>	168	181	232	410	410	442	444	460	565	588
Tools and furniture <sup>2</sup>	2	2	2	4	7	12	12	12	12	2
Orchard and Hatchery	2	1	2	4	4	5	5	5	5	6
Total (1)	172	184	236	417	421	459	462	477	583	607
2. Expenditure on installation	8	8	12	—	—	—	—	—	—	—
<i>3. Current assets</i>										
<b>3.1 Stocks</b>										
Silks, cocoons and eggs <sup>3</sup>	348	441	228	28	61	139	80	1	41	[53;]
Flour, grain <sup>4</sup>	—	—	—	94	75	72	90	188	258	118
Olives, oil <sup>5</sup>	0,2	2	0,1	—	0,1	—	2	4	1	5
Fuel <sup>6</sup>	—	1	3	15	8	27	26	18	15	13
Materials <sup>7</sup>	4	3	5	13	15	28	28	37	44	46
Total (3.1)	351	447	236	149	159	265	227	249	361	236
<b>3.2 Others' liabilities</b>										
Debit accounts	70	100	184	271	223	189	133	60	47	53
Debtors to steam mill	—	—	—	21	74	86	98	158	119	124
Other <sup>8</sup>	—	—	—	17	17	17	17	17	17	17
Total (3.2)	70	100	184	310	315	292	237	235	183	194
<b>3.3 Liquid assets</b>										
Cashier and bills receivable	2	—	1	16	38	9	12	2	4	5
Total of current assets (3)	423	546	422	475	511	566	476	486	547	435
TOTAL OF ASSETS	602	738	671	892	932	1026	938	964	1131	1042
<b>B. LIABILITIES</b>										
<i>1. Capital</i>										
Share capital	304	304	304	304	304	304	304	304	304	304



TABLE 10

<i>Accounts</i>	<i>12.55</i>	<i>12.56</i>	<i>6.58</i>	<i>6.59</i>	<i>6.60</i>	<i>6.61</i>	<i>6.62</i>	<i>6.63</i>	<i>6.64</i>	<i>12.64</i>
<b>Reserves*</b>	<b>3</b>	<b>14</b>	<b>18</b>	<b>21</b>	<b>24</b>	<b>27</b>	<b>30</b>	<b>33</b>	<b>36</b>	<b>38</b>
Total (1)	307	318	322	325	328	331	334	337	340	342
<b>2. Obligations</b>										
2.1 Medium-term (?)										
National Bank of Greece	43	22	48	20	47	202	234	229	228	301
Various Creditors <sup>10</sup>	22	57	127	166	250	5	81	49	58	57
<b>Individual current accounts</b>	<b>135</b>	<b>190</b>	<b>407</b>	<b>413</b>	<b>287</b>	<b>445</b>	<b>413</b>	<b>419</b>	<b>415</b>	<b>386</b>
Total (2.1)	200	268	581	599	585	653	728	697	701	745
2.2 Short-term										
Bills payable	108	93	80	199	205	196	169	167	270	258
<b>Misc. short term debts<sup>11</sup></b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>12</b>	<b>26</b>	<b>1</b>	<b>15</b>	<b>45</b>	<b>17</b>	<b>10</b>
Total (2.2)	111	96	89	211	232	211	185	212	287	267
<b>Total (2)</b>	<b>311</b>	<b>365</b>	<b>670</b>	<b>810</b>	<b>816</b>	<b>864</b>	<b>913</b>	<b>909</b>	<b>988</b>	<b>1012</b>
TOTAL OF LIABILITIES										
<b>Balance</b>	<b>618</b>	<b>682</b>	<b>992</b>	<b>1136</b>	<b>1145</b>	<b>1195</b>	<b>247</b>	<b>246</b>	<b>1329</b>	<b>1354</b>
	-16	56	-321	-244	-213	-169	-309	-282	-198	-312

\* 'Rounded off' to the nearest thousand. The sums correspond to the actual amounts and not the 'rounded off' ones in the table.

1. The accounts: 'Athens Silkmill', 'Repair of silkmill', 'Buildings of flour mill and oil press', 'Flour mill engine', 'Oil press engine', 'Increase of steam mill and oil press', 'Plots of land to the silkmill' and 'Expenses on wells'.

2. The accounts: 'Tools for factory', 'Spinning machines', 'Oil vats', 'Material of steam mill', 'Furniture and miscellanea'.

3. The accounts: 'Silks to...' or 'Noils to...' and the name of some agent. For the cocoons, the accounts: 'Cocoons in the warehouse', 'Cocoons to...' (agents) and 'Perforated cocoons', as well as: 'Purchase of cocoons...' of the next harvest, which theoretically have not yet been consumed. Lastly, the accounts: 'Cocoon eggs', 'Cocoon eggs in the provinces' etc.

4. The accounts 'Grain purchase', 'Flour in store' and, from 1860, 'Flour sales'.

5. The accounts 'Oil in store', 'Oil to pay for purchasing olives', 'Oil to...' (agents), 'Olive purchase' and 'Fats in store'.

6. The 'balance sheets' include two accounts for wood, one cumulative and one with the clear indication that it is the stock for future use. The second has been calculated here.
7. The accounts 'Sacks of cocoons', 'Sacks of flour', 'Burlap, ropes and string'.
8. The account 'Lawsuit against Roeck about water'.
9. The account 'Reserve capital' and 'Owners of shares representing the value of the factory', that is the contingency and ordinary reserves respectively (the second account accumulates 2% of the 152 shares imposed by the statutes).
10. No other clarification.
11. The liabilities accounts 'Piraeus municipal tax', 'Quay dues', 'Athens municipal tax' and 'Piraeus Customs'.

fixed capital in its assets (Table 11), even with its undervalued accounting value, simply presaged the company's future: that is its transformation into high value real estate in the centre of the expanding capital.

The firm's difficult financial position is apparent from comparison of its current assets with its obligations. Incomplete knowledge of the kind of liabilities (current or deferred) prevents us from making precise calculations of the liquidity ratios. Nevertheless, all possible approaches give negative results. The ratio of current assets to current liabilities (current ratio) is only at acceptable levels (over 2) when all the individual current accounts, including that of the National Bank of Greece,<sup>147</sup> and 'miscellaneous' credits, can be considered as long-term credits (with payment term of over a year). The same applies to the liquidity ratio. But this version is rather improbable: the distinction in Table 10 between short-term and 'medium-term' credits, which only aims at separating the credits with various –or unknown– deadlines from overdue promissory notes, is abusive. If in the credits characterized there as 'short-term' we include just one of the categories of other accounts, all the liquidity ratios move within the 'red zone'.

This permanent crisis of liquidity was possibly the most direct way in which Durutti understood the difficulties his company was facing, and which led him to request, already from 1857, the increase of its capital. At the 1862 meeting he declared that 'the position in which I find myself at this very time is insecure', and 'if we do not regulate the affairs of our Company, I am no longer capable of following the operation...'. The capital was never increased and as a result the participation of the same capital in the total liabilities decreased steadily (Table 12 and Diagram B).

All the accounts of the Société Séricicole bear witness to the existence of an extra-banking credit system that was not supported only by commercial transactions, but was certainly articulated directly with personal relations. Up until 1860, and particularly after the losses of 1857/58, the company drew significant credits from various lenders (not all named in the 'balance sheets'). Durutti named some of them at the 1862 general meeting: 'In the period of the commercial crisis [he means the period 1857-58]... in the dire

147. In 1865 the silkmill was valued by the municipal assessor Panagis Antoniadis, at 550,000 drs and the orchard at 40,000 drs (Notification of auction 1865).

148. I did not manage to find any trace of the Société Séricicole in the Historical Archive of the National Bank, despite the considerable efforts of the archive's researchers, Zisi Synodinos and Zizi Salimba, whom I thank here. It is possible that because of the long-term pendency between the National Bank of Greece and the Durutti family (on account of the mortgaged real estate property), all the related file is in some other service of the bank, rather than the archive.



**TABLE 11**  
**BREAK DOWN OF NET ASSETS IN PERCENTAGES (%)**

<i>Categories of assets</i>	1855	1856	1858	1859	1860	1861	1862	1863	1864*
Fixed	28,6	24,9	35,2	46,7	45,2	44,8	59,3	49,5	51,5
Stocks	58,3	60,6	35,2	16,7	17,1	25,9	24,2	25,9	31,9
Others'									
liabilities	11,6	13,5	27,4	34,6	33,7	28,5	25,3	24,3	16,2
Liquid	0,3	–	0,1	1,8	4,1	0,9	1,3	0,2	0,4

\* 1864: balance sheet 30 June.

circumstances in which [the company] found itself... thanks to the contribution on the one hand of our partner A. Pappadakis and our relatives M. Iatros and C.G. Durutti, and on the other hand our partners and agents the Souchon brothers, it was possible to avoid the threatening... dangers'. Constantine Durutti and the Suchon brothers had the largest share of individual current accounts; consequently the bulk of the remaining credit that is not specified ('Miscellaneous lenders') must have come from Antonios Pappadakis and Michael Iatros, and perhaps from third parties too. As can be seen in Table 10, the raising of the credit limit in the account of the National Bank of Greece in 1861 (from 50,000 to 250,000 and 300,000 drs) was used to pay off these 'miscellaneous lenders', whose share henceforth did not exceed 60,000 drs, while the participation of current accounts remained at very high levels. Moreover, it is apparent from the 1859 balance sheet that C. Durutti, M. Iatros and A. Pappadakis also lent to the company with short-term promissory notes (totalling around 150,000 drs for that year).

The distribution of credit (Table 13) shows that the basic shareholders kept open accounts with the Société, either through commercial transactions or without such dealings (Mavrokordatos and Chatzipetros were such cases), which had steady credit balance after 1858 (see for comparison Table 14) and constituted an important part of its borrowed income. These accounts cannot be equated with the practice common in European companies (as well as Greek ones later), of shareholders leaving their profits in the business, in interest-bearing accounts, in order to reinforce its liquid assets, because the Société Séricicole did not make profits, or at least not on such a scale. In other words, the shareholders, who failed to agree on increasing the company's capital, in fact made it loans. This was the case until 1858: it seems that during the 1857-58 crisis there was a wider mobilization of resources from the family (Durutti brothers, M.Iatros), among which Durutti's son-in-law, Ioannis Spiliotakis, can be reasonably included, as well as from other Athenian shareholders. Henceforth, support with individual current accounts became a close family concern, and indeed more and more the concern of just

**TABLE 12**  
**BREAK DOWN OF NET LIABILITIES IN PERCENTAGES (%)**

<i>Categories</i>	1855	1856	1858	1859	1860	1861	1862	1863	1864
<i>of liabilities</i>									
<i>Share capital</i>									
<i>and reserves</i>	49,7	46,6	32,5	28,6	28,6	27,3	26,8	27,0	25,6
<i>Debts</i>	51,3	53,4	68,5	71,4	71,4	72,7	73,2	73,0	74,4

one man, Constantine Durutti. Here the elder brother was enhanced as the central figure for the fate of the Société Séricicole: he was perhaps the most loyal stalwart of the vision of establishing industry in Greece.

It is very possible that Constantine Durutti's credits after 1859 concerned the purchase of wheat, in which he is known to have been involved,<sup>149</sup> since there is no account in the category of foreign creditors that could be connected, at least overtly, with the wheat trade. The lion's share of the foreign credit lay with the Souchon brothers in Lyons (represented by Degrand & Pignatel in the first year). The remaining credits (from Marseilles, Paris, London, Ancona and Tunis) are related to silk – in any case the decline of the Société's silk-reeling activity also explains the progressive shrinking of this category of accounts.

Comparison of Tables 13 and 14 reveals a mechanism of transferring credit from abroad (mainly from France) to provincial Greece –as well as to the wider sector of Greek merchants–, at least until 1861/62, via the Société Séricicole, which would benefit from the difference in interest rates. It should be made clear that, with the exception of Roeck, the Société's debtors abroad (Table 15) were almost exclusively Greek merchants based in eastern Mediterranean ports (Thessaloniki, Volos, Chios and Rethymnon). The Société's debtors in provincial Greece were mainly its suppliers of raw materials, to whom it is assumed it granted advance payments. The geography of these debit accounts covers a network of 45 persons (while only 26 appear in the credit accounts of this category) in virtually all parts of the country: the Peloponnese, Euboea, Chalkida, Amphissa, as well as Karpenisi, Andros, Tinos and Syros. The densest transactions were with Kalamata, Sparta and Andros, the main markets supplying the company with cocoons, as well as with Syros where it sent part of its output of silk. In brief, the Société Séricicole took down payments from its customers in Lyons (i.e. the Suchon brothers) and granted advance payments to its suppliers and customers at home.<sup>150</sup>

If the Société significantly widened its credits towards its suppliers, and indeed in the difficult period 1857-60 (the inflation of the credit accounts in this period probably belies the difficulties in the provinces, a consequence of the 1857-58 crisis, rather than the Société Séricicole's expansion of operations), it nevertheless seems that these credits were handled carefully: the personal

149. As far back as in the period of residence on Corfu, see the article by Maria Christina Chatzioannou in this volume.

150. Similar deposits were paid by the Bontoux firm in Lyons to the Italian company Scotis, see R. Tolaini, *op. cit.*, 96.



TABLE 13

## DISTRIBUTION OF CURRENT CREDIT ACCOUNTS (IN THOUSAND DRACHMAS)\*

Categories of creditors	1855	1856	1858	1859	1860	1861	1862	1863	1864 $\alpha$	1864 $\beta$
Provincial agents	3	16	14	12	11	7	11	28	18	21
Athenian shareholders and relatives <sup>1</sup> , of whom:	26	34	158	177	210	19	252	312	360	280
C. Durutti	26	20	53	105	161	139	204	260	310	215
A. Durutti										
M. Iatros & I. Spiliotakis	–	–	75	57	47	58	46	47	50	63
Accounts of creditors abroad, of whom:	105	139	236	224	66	240	150	79	38	85
Freres Souchon	–	118	226	218	8	237	150	10	34	81
TOTAL	135	190	407	413	287	445	413	419	415	386

\* Rounded off to the nearest thousand.

1. C. Durutti, A. Durutti, M. Iatros, I. Tsatsos, D. Mavrokordatos, Chr. Paramythiotis and I. Chatzipetros. The only non-shareholder we included in this category, because he must not have had dealings with the Societe Sericicole, is I. Spiliotakis.

TABLE 14

## DISTRIBUTION OF CURRENT DEBIT ACCOUNTS (IN THOUSAND DRACHMAS)\*

Categories of debtors	1855	1856	1858	1859	1860	1861	1862	1863	1864 $\alpha$	1864 $\beta$
Provincial agents	5	51	94	150	148	161	110	48	35	51
Athenian shareholders <sup>1</sup>	51	8	–	8	1	17	12	10	10	1
Debtors abroad, of whom:	14	41	90	113	73	11	0,1	1	0,6	0,6
L. Roeck	13	36	70	70	70	–	–	–	–	–
TOTAL	70	100	184	271	223	189	122	60	47	53

\* Rounded off to the nearest thousand.

1 I. Tsatsos, ('Tsatsos and Ginakas' in 1855), M. Iatros and A. Durutti.

debit balances are usually very small, under 10,000 drs and rarely exceeding 20,000 drs, while only the account of the regular supplier –and long-standing collaborator of Iatros– from Gytheion, P. Poulakos, approaches 50,000 drs on one occasion (in 1861). To return to the initial imbalance observed in the balance sheets of the Société Séricicole, the question posed is to what extent this is due to the primary deficit, that is to the negative results of the productive unit itself. In Table 15 the reconstruction of these results is attempted, with the two available ‘Operating Results’, of 1855 and 1856, as basic guide.<sup>151</sup>

According to our calculations, over the ten-year period the Athens silkmill disengaged about 25,000 drs of net profits. This sum represents just 8.2% of the paid up capital (304,000 drs), or a percentage of 0.8% per annum, a minimal percentage given that any other placement of capital could have yielded at least ten times as much a year. The deficiencies that surely exist in our calculations (in particular the level of the damage in 1857/58 should be lowered since it does not include the ‘undeclared’ income from the export of cocoons) does not essentially alter this conclusion. It should, moreover, be noted that the above figures, after 1858, do not include A. Durutti’s salary (6000 drs a year according to the statutes),<sup>152</sup> and the dividends (that were not given) have not been calculated either. In other words, the Athens silkmill only just covered its expenses for the whole of the period under consideration, and although it does not show a primary deficit in its productive activity, it certainly did not permit any accumulation (that is any self-financing), beyond the insignificant regular reserve that the statutes stipulated. That is, all new investment was made with borrowed capital and the accounting deficits our calculations expose are not far from the truth.

The limited, almost zero, efficiency of the factory was essentially due to its size –given the steady reduction in its main productive activity–, to technical difficulties and to bad management. Notable profits from silk-reeling were only gained in 1856 and 1858/59, two years in which the price of cocoons was relatively low (Table 7), while in the following years the new activity, flour-milling, although yielding a larger income, failed to solve the problem of the silkmill’s under-operation, since the income from the steam mill was mainly absorbed by running costs and general expenses. These expenses included the salaries of the permanent staff and the wages of the other workers (excepting the female silk-reelers), full-time or temporary (the relevant sum ranging from 18,000 to 30,000 drs per annum); the business employed at least 10 permanent personnel (clerks, janitors, overseers, boiler stokers etc.) and together with the temporary labour, some 12-15 persons (porters, builders and other casual labourers) in all. In some years the total running and maintenance costs were huge (around 84,000 drs in 1861/62): in that year the ‘costs of the steam engine’ (36,500 drs), the outlay for the carpenter’s shop and the smithy, as well as maintenance were extremely high;

151. More specifically, all the accounts that were included in the ‘Results’ for 1855 and 1856 were isolated from the ‘balance sheets’ after 1858. These accounts are all cumulative after 1858, and the necessary subtractions have been made here. However, some other accounts which are in the assets of the company’s ‘balance sheets’ have been included here too, such as those concerning taxes, duties, fire insurance and judicial rights etc.

152. Durutti’s salary appears as a separate account only in the first two years (in ‘Results’). It is not clear whether it was afterwards calculated in his open account (as debt of the company), which always had a credit balance.

**TABLE 15**  
**OPERATING RESULTS OF THE SOCIÉTÉ SÉRICOLE, 1855-1864**

Accounts	1855	1856	1858	1859	1860	1861	1862	1863	1864
<b>A. NET INCOME<sup>1</sup></b>									
1. Silkmill	31	160	[6] <sup>2</sup>	110	58	32	10	25	12
2. Steam mill	–	0,2	2	19	83	77	39	72	95
3. Oil press	–	0,8	–	–	0,1	–	0,7	3,4	1
Total A (1+2+3)	31	161	[8]	130	141	110	50	100	108
<b>B. GENERAL EXPENDITURE</b>									
4. Operating and maintenance <sup>3</sup>	11	29	59	27	57	45	84	54	41
5. General expenses <sup>4</sup>	5	12	5	4	4	2	11	4	2
6. Durutti's salary	6	6	–	–	–	–	–	–	–
7. Extras	–	–	–	–	26 <sup>5</sup>	–	–	–	–
B. Total B (4+5+6+7)	22,5	47	64	31	62	47	95	58	43
<b>C. GROSS PROFITS/LOSSES</b>									
(A–B)	8,3	115	[–57]	98	63	62	–45	42	66
<b>D. TAXES, INTEREST ETC.</b>									
8. Taxes, duties etc. <sup>6</sup>	–	0,5	3	1	6	2	1	3	2
9. Interest	8,5	12	35	12	44	32	66	28	[:] <sup>7</sup>
10. Depreciation of expenses of previous use <sup>8</sup>	–	22							
<b>E. NET PROFITS/LOSSES</b>									
(I–Δ)	–0,2	80	[–94]	85	13	29	–113	11	[63]
11. Statutory reserve	–	3	3	3	3	3	3	3	3
12. Non-calculated expenditures <sup>9</sup>	16	8,3							
<b>F. ACTUAL NET PROFITS FOR DISPOSAL/LOSSES FOR DEPRECIATION</b>									
	–16	68	[–97]	82	10	26	–116	8	[60]

1. Silkmill: From the sum of all the liabilities accounts of income ('Fine silks', 'Coarse silks', 'Silk noils', 'Perforated cocoons', 'Cocoons to Souchon', 'Silk reeling') have been subtracted all the assets accounts of production costs: 'Purchase of cocoons of [the year of the harvest associated with each productive cycle]', 'Selection of cocoons', 'Wages of silk-reelers', 'Purchase of timber' and 'Expenses of silkmill'. Steam mill: the liabilities accounts 'Sale of flour' (from 1860 'Profits of steam mill') and 'Grinding fees'. Oil press: the liabilities accounts 'Oil sales' or 'Operating results of oil press'.

2. The numbers for 1857/58 are particularly dubitable (see chapter on production).

3. All the assets accounts related to wages/salaries ('Wages of workers and staff', which was replaced after 1859 by two separate accounts: 'Staff of the silkmill' and 'Staff of the premises') as well as the account 'Expenses and wages of French persons for the silkmill', which mainly burdens the years



1855-58. Also the accounts 'Carpenter's workshop', 'Smithy', 'Maintenance expenses for premises' and 'Steam engine expenses'.

4. The accounts (always in the assets) 'Miscellaneous expenses of premises' and 'Office expenses', the accounts of transport expenses ('Expense of despatching silks', '... noils' etc.) and of rents ('Rent of warehouse in Sparta', '... in Piraeus').

5. Liabilities accounts 'Kokkalis court case' (arrears for depreciation).

6. Assets accounts 'Athens hospital tax', 'Athens municipal tax', 'Piraeus Customs', 'Fire insurance dues', 'Legal duties' etc.

7. Anomaly in the movement of 1864 account.

8. Part of the expenditure that had not been included in the 'Results' of 1855.

9. These are the expenditure accounts that have not been included in the 'Results' but in the assets of the balance sheet, see n. 147.

though we cannot be certain about the 'sincerity' of these accounts, they obviously belie technical problems and expensive repair works.

Lastly, thanks to the 'Operating Results', glaring irregularities in management are revealed in the first two years. As can be seen in Table 15, the 'Results' do not include all the actual expenses of each year, but carry over a part of them –and not always clearly– for depreciation in the next year. So the 'Results of 1856', for example, show net disposable profits of about 80,000 drs, whereas they were in reality 68,000 drs. Once more it becomes obvious that Durutti had no clear picture of the real overall cost of running the factory. Furthermore, the profits of 1856 essentially vanished into thin air. Either because Durutti wished to convince the shareholders of the efficiency of the business or because he was pressurized by them, in that year he allocated 63,840 drs in dividends (210 drs per share for the two years, that is 10.5% per annum), kept 4,560 drs for himself as an additional remuneration of 6% on the net profits, and left only 7,600 drs as extra capital reserves (this was in any case the only year in which so much capital reserve remained). So it is hardly surprising that the cash account shows a zero balance in that year (see Table 10). Of course in the following years, after the bitter setback of 1857/58, the Société had no dividends to share out; as Table 15 shows, the profits of some years simply wrote off the losses of the others. There was no serious possibility of self-financing and the now standard practice of operating, and indeed investing, on borrowed capital seriously overburdened the management with interest, which permanently absorbed over 50% of the gross profits.

Here lies one of the most important problems of the company's strategy: the fact that the new investment was estimated as profitable, without calculating correctly its actual cost. To the already expensive installation was added a costly investment that did not offset the deficits: this was a bold and quite imaginative business strategy, but it was not accompanied by the necessary managerial prudence or 'good housekeeping'. The credentials of

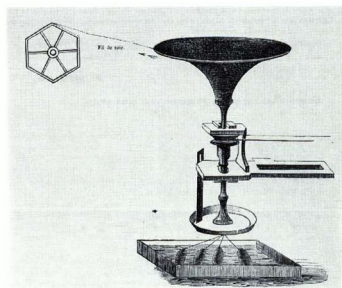
the Société Séricicole were not particularly attractive; its liquidation was inevitable.

### The abortive efforts to increase capital: the end of the Société Séricicole

Increasing the capital of the Société Séricicole was an issue on the agenda at all the general meetings of its shareholders from August 1857 onwards and yet it was never in fact achieved. The relevant discussions and decisions attest that managerial short-comings and woolly ideas on the needs of an industrial firm were by no means exclusive to the silkmill's manager, Athanasios Durutti, and that the relations of most of the limited liability shareholders to this enterprise were ambivalent, to say the least.

At the first meeting, of 24 June 1855, when the decision to build the flour mill was taken, Durutti, still optimistic about the firm's future, did not propose a corresponding increase in capital. But the decision of that meeting concerning the manner of financing and the regime of the new investment contains so many vaguaries that it raises questions about the shareholders' awareness of the nature of their relationship with the company. Specifically, it was decided that 'the costs of setting up the steam mill would be paid by the company'; it was also decided 'to keep a separate account and accurate note' of these costs and, when the company expired, that is ten years hence, that '[the shareholders] be obliged to pay to the company these expenditures [...] and in this manner to acquire [...] the ownership' of the steam mill.<sup>153</sup> What money would the company use to make the 'advance'? From its own capital and/or its profits, in other words the shareholders' money? If so, then why would the shareholders pay during the expiry? Or perhaps from borrowed capital?<sup>154</sup> But who would grant the loan, how would it be paid back, and what would become of the net profits (after deduction of the interest)? There is no clarification in the related minutes. It is, moreover, characteristic that whereas 'an accurate note' was kept on the costs of the new investment, nothing of the like seems to have been kept on either the source of money or the manner of servicing the related loans. In reality, as we have seen, the new investment was made with borrowed capital of diverse provenance, mainly short-term, including loans from shareholders; these last were repaid in 1860 by increasing the loan from the National Bank of Greece. What is of interest here is that from this first decision of the shareholders, unorthodox interventions in the institution of the limited partnership company are obvious.<sup>155</sup>

Two years later the prospects for the business had been completely reversed, and at the meeting of 8 August 1857 Durutti declared that 'it is absolutely necessary to issue new shares', since some 120,000 drs had been spent on the steam mill 'and therefore the monetary capital of the Société has been reduced appreciably'.<sup>156</sup> The proposal was accepted by all those



**11. Design for a reeling basin with its parts and wheel. Annotated in French, no other indication. 12 x 22 cm. (Chr. Zioulas Collection).**

153. Chr. Zioulas Collection, Minutes of the Meeting 24.6.1855.

154. The decision implies something like this, stating that 'instead of the interest on the deposits [the company] will enjoy the fruits of these factories throughout its existence', an equally vague statement, however.

155. It is known that in these companies the manager, who was solely responsible with the whole of his property, was absolutely free to manage the company's capital as he thought fit, to borrow in its name etc., provided he gave account to the shareholders and of course secured profits; this last was the only thing that interested the shareholders, who were only responsible according to the level of their participation. The above decision ushered in a truly new model, essentially combining personal and partnership business, in a way a business within the business, which the shareholders were committed to buying afterwards.

156. Chr. Zioulas Collection, Minutes of the Meeting 8.8.1857. It is perhaps redundant to note that this ascertainment essentially confesses that the investments were made with the shareholders' capital...

present,<sup>157</sup> but without specifying details on the issue of new shares; it was simply decided that their quantity 'will be equal to the exactly calculated expenditure [...] by the time full equipping [of the flour mill] is completed' and a deadline of 30 September was set for the owners of shares in the property to commit themselves to buying the new shares.

Two years of inertia passed, since, as we have seen, the 'full equipping' of the steam mill was delayed. After an unofficial 'council' of the Athenian shareholders in April 1859,<sup>158</sup> which renewed the decision to issue new shares and determined their number as 696 of nominal value 1,000 drs, and after a futile trip by Durutti to France, the general meeting of 31 July 1859 discussed the matter once again. Although agreement had been reached on the nominal value (1,000 drs) and the type of the new shares (they would be personal and equivalent to ownership shares), a problem arose with regard to defining their actual value; Pavlos Kalligas, who represented L. Roeck, declared that 'it is not possible to express this before seeing the company's balance sheets...'. As a result, the final decision was deferred until the balance sheet of the year (of 30 June) was presented to the shareholders.

This small detail of the actual value of the new shares emerged as a crucial problem that finally overthrew plans to issue shares on the classical terms of the capital market. And this because it brought to the surface the true state of the company. A balance sheet was not presented, except perhaps to a limited circle of shareholders (C. Durutti, A. Pappadakis and I. Tsatsos). Together with A. Durutti, they held a new unofficial meeting in October 1859 and 'thinking maturely' came to the conclusion that 'the issue of new shares according to what had been decided will not bring any result, since it will be impossible, because of the losses the Company has suffered, to sell the new shares to third parties...'.<sup>159</sup> Consequently the shareholders were left with no option but to cover the necessary increase of the capital themselves.

Between then and early 1862,<sup>160</sup> Durutti convened a further four general meetings and made another two trips to France, in his efforts to persuade all the shareholders to contribute to increasing the capital. He does not seem to have realized, despite his penchant for legal matters, that they were under no legal obligation to do so. He presented a succession of plans, first under the threat that 'the shareholders must agree to the particular plan [...] otherwise the Société will be liquidated' (meeting of 24.1.1860), then by saying that 'a writ will be taken out' against the shareholders who did not agree (meeting of 29.4.1861) and lastly, after deciding that to sue 'takes a great deal of time not compatible with the needs of the company',<sup>161</sup> by proposing that 'the Société pay [the share of the shareholders who did not accept the plan] on their behalf and calculate the legal interest' (!) (meeting of 15.5.1861). Needless to say, when this last recommendation was announced to the French shareholders they refused to acknowledge it outright.<sup>162</sup> In the meantime, the amount proposed for coverage had been reduced from 696,000 drs ('council' of April

157. Almost all the shareholders were represented at this meeting, among them Roeck and other French shareholders, see Table 1.

158. Present were: the Durutti brothers, M. Iatros, A. Pappadakis, I. Tsatsos and D. Mavrokordatos. The relevant testimony in the Minutes of the Meeting 21.1.1862.

159. Minutes of Meeting 21.1.1862.

160. The last related document to survive is the Minutes of Meeting 21.1.1862: although, as we have said (see n. 22), all the minutes were subsequently submitted to the Court of the First Instance, we do not know how they were used.

161. Minutes of Meeting 21.1.1862.

162. *Ibidem*, where the letters in reply from L. Roeck and A. Thiebaud are attached.



1859) to 304,000 drs ('council' of October 1859), to end up at 270,000 drs, the estimated final cost of the new investments (meeting of 29.4.1861)

The more insistent Durutti appeared, the more hesitant the shareholders became. The minutes of the meetings give the impression that the continual postponements and suspensions were due to some kind of group psychology, a silent consensus of the type 'all or none'. In all the meetings known of, Durutti's proposals at first secured the agreement of the clear majority of shareholders. Some of the basic shareholders (Tsatsos, Pappadakis) had in any case already deposited the money sought, in the form of current accounts to the company,<sup>163</sup> while Constantine Durutti handled *carte blanche* the 18 shares he represented. So at the critical meeting of 21.1.1860 the proposal for compulsory increase of capital (by 304,000 drs) was approved by 227 shares of the total of 265 represented. Strangely enough, however, the same meeting finally decided that 'this number is not sufficient for executing the plan'.

Either all or none: more correctly, either together with the French or not at all. The 39 shares of the minority at that meeting corresponded to the French participation and it seems that the negative attitude of the French was in fact the catalytic factor that paralyzed the group dynamic. Both L. Roeck, at loggerheads with the company, and A. Thiebaud<sup>164</sup> refused to participate in increasing the capital. It seems that even more influential were the reservations of the Souchon brothers, who had 33 shares in their hands and were the firm's basic creditors abroad. The Souchon brothers were presumably aware of the business's difficult economic situation and they were even more insistent on seeing the balance sheets. On his last trip to France, in May 1860 (after the order of the meeting of 13 March), as the ultimate effort to prevent the company's dissolution, Durutti showed the balance sheet of 30.6.1859 to all the French shareholders. He failed, however, to secure their assent.<sup>165</sup>

One point on which the disagreement of the French shareholders focused reveals significant divergences in the conceptions of the two sides. Basic element of Durutti's proposals from October 1859 onwards was the equating of all the shares to the original 'ownership' shares, a move that ensured rights in the real estate property and obligatory capital reserve of 2% annually for all the shares. This element was most probably the attraction that secured the initial assent of the Greek shareholders, and particularly the most important of them, A. Pappadakis, but it evidently made little impression on the Souchon brothers. They were presumably more interested in the efficacy of the enterprise, and arguing that the losses of the steam mill ought not to burden all the shares but only the nominal ones they rejected the equating. At their last meeting with Durutti they requested that new statutes be drawn up before any other move was made, obviously so that some order be brought into the chaotic situation that Greek side's novel interpretations of the institutions had created.

163. Also taken for granted was the consent of Mavrokordatos, who did not attend the meetings from January 1860 onwards. However, when his representative G. Zochios stated that he did not have the relevant authorization from his assignor, A Durutti sped to declare that he would take Mavrokordatos's share in his name (see Minutes of Meetings 24.1.1860 and 21.1.1862).

164. Thiebaud had bought half Roeck's personal shares.

165. Indeed it seems that at this meeting the Frères Souchon, who on Durutti's previous trip had agreed to take only 17 new shares, rescinded on this point too.

The refusal of the French must have affected Durutti himself, for he never suggested that the Greek shareholders go ahead without French participation, and indeed he offered repeatedly to take in his name the shares proportionate to the Souchon holdings, perhaps hoping that sometime he would convince them. It affected the other shareholders even more; at the last known meeting (21.1.1862) I. Tsatsos and A. Pappadakis sided openly with the Souchon brothers' request for new statutes. At that meeting Durutti's final proposal, that all the shareholders deposit obligatorily the expenses of the steam mill (270,000 drs or about 890 drs a share), under the vague threat of legal action against those who did not agree, only received 177 votes.

What happened in the interim between the January 1862 meeting and the decision to liquidate the company we do not know. What we do know is that by 1865 the Société Séricicole was already being dissolved (in any case a decade had passed since its founding) and A. Durutti and I. Tsatsos had been appointed its liquidators.<sup>166</sup> In the same period, obviously in an endeavour to secure the Durutti family's control of the premises, Constantine Durutti resorted to the courts for the 'debt owed [him by the company], drachmas 215,069.61 and the interest on this from 31 December 1864'. Decision no. 516 of 12 June 1865, of the Court of the First Instance at Athens, ordered compulsory sequestration of the factory. Its auction was originally fixed for 19 September of the same year, at least according to the first related notification, published on 7 August. C. Durutti himself offered as opening price 280,000 drs for the silkmill and 40,000 drs for the orchard, while the two properties had been valued at 550,000 and 40,000 drs respectively.

We have not managed to track down anything pertaining to this auction. It may well have been postponed, because at that time two cases were pending between the Société Séricicole and G. Sarris and Chr. Siegel, who claimed part of the property. However, in one way or another, ownership of the premises finally ended up in the hands of the Durutti family.

### **From the Société Séricicole to 'Athanasios Durutti & Co.'**

After the liquidation of the Société Séricicole the business continued operating for a further ten years, under the name 'Athanasios Durutti & Co.', a simple company about which, unfortunately, we have no information. We do not know if and how the rest of the shareholders were compensated, or whether any of them participated in the new scheme.<sup>167</sup>

The family business pressed ahead with restructuring the productive activities and adapting the premises. It reduced the capacity of the silkmill to about half, doubled that of the oil press and created the bakery. These operations were accompanied by a renovation and rearrangement of the machinery. In 1869 a new steam engine was purchased for the silkmill, of less horse-power but with a more efficient and economical system (variable

166. All the information that follows is from the Notification of Auction 1865.

167. Many years later, on Athanasios Durutti's death (1901), there were still pendencies with French banks, which were presumably the echo of accounts with the French shareholders. According to a note by Chr. Zioulas, dated 7.1.1993, Durutti 'left behind outstanding bills and court cases [...] with the National Bank of Greece and with some French bankers [...] [but] he paid off virtually [...] all his creditors except the French bankers, whose demands in the majority were doubted. They received what was owed from his children after irrevocable decisions of the Greek courts'.

expansion), while the steam engine of the flour mill was modified. The old engine of the silkmill, also modified, was installed in the oil press, while the donkey engine was added to the well on the south side, that also served the smithy. All these changes bear witness to the effort to cut down on fuel costs and energy loss caused by the old engines and the transfer of power.<sup>168</sup>

Although the transformation of the business from a corporate to a family one was fatefully accompanied by its shrinking, Durutti does not seem to have abandoned his ambitious plans for reviving an industrial unit. In 1873-74 he attempted to set up a new company, this time a *société anonyme*, a proposal for which he asked the help of the Governor of the National Bank, Markos Renieris, in 1876.<sup>169</sup>

However, by this time that rival to industrial development, the exploitation of real estate, was already in the ascendancy. The potential profits from the flour mill and the oil press, two traditional industries that now existed in most of the Greek ports and had given margins and models of operation, could not compete with the high values of urban land. By 1875 part of the factory was already being exploited as urban real estate through renting.<sup>170</sup> Not long afterwards the factory stopped working; the final withdrawal of the Durutti family from industrial enterprises should perhaps be associated with the death of the elder brother, Constantine, in 1878.

### Conclusions: the limits of business activity

Notwithstanding its eventual failure, the Athens silkmill operated for twenty years. Though marginal for the capital, both to the site and the economy of the city, it was nonetheless a laboratory of new experiences and a bearer of change. It was one of those precursory experiments that try out, palpably, the new forms of economic and social organization. Its failure in any case should not be considered a Greek singularity; there was a high mortality rate for businesses everywhere in the first steps to establish industry.

The silkmill's 'misfortune' was that it was founded at the end of the period characterized with hindsight as a 'golden age' in the silkworking sector (1820-1850),<sup>171</sup> during which the rapid rise in the demand for silks, in Europe and America, gave it tremendous impetus, especially in the Mediterranean. Two trends that dominated silkworking at that time led to the founding of the Athens silkmill. The first was the mechanization of reeling, which enabled this activity to be disengaged from the rural household and concentrated in factories, in the hands of businessmen, and the second was the tendency of European businessmen to set up silkmills near areas engaged in sericulture, in order to cut down on transport costs and to ensure the supply of the European spinning and weaving mills with raw material of standardized and controlled quality.

168. It should be noted that from the mid-19th century the technology of the steam engine improved considerably, as a consequence of which fuel consumption was reduced by a ratio of 4:1 by the end of the century; variable expansion was invented by the American Corliss in 1849, but was not implemented generally until the 1870s, see M. Daumas, op. cit., vol. 4, 57-84.

169. According to a note by Chr. Zioulas (7.1.1993), referring to the Durutti's letter to Renieris of 26.1.1876, in which Durutti maintains that he has secured the participation of Baron Emilius Erlinager and K. Zappas in his plan. I have not seen this letter.

170. The National Bank, to which the property was always mortgaged, at that time asked Durutti 'to cede to the bank instead of interest the rents of the fields and to proceed also to selling off plots from the mortgages'. Zioulas's note (7.1.1993) is attached to the relevant letter of the Governor of the National Bank of Greece, dated 9.10.1875.

171. A good summary of the developments in this sector in Cl. Zanier, *Alla ricerca del seme perduto*, Milano 1993.



What was destined to happen when the 'golden age' ended, with the pébrine crisis, the great upheaval in the market, the massive import of products from the Far East and finally the decline of silkworking throughout the Mediterranean, could not possibly have been foreseen when the Greek entrepreneurs bought the factory of the bankrupt English company. Their action should be correlated to the propitious prospects and if they inherited a project that corresponded to markets of another size and other entrepreneurial and economic scales –something which of itself constituted a serious entailment for the silkmill's future–, this was offset by the fact that they acquired it at 'half price'. Nevertheless, it is very likely that for most of the Greek shareholders the motives for involvement in the business transcended cold, economic calculations. It would be remiss of us to overlook the personality of the individuals who constituted the Société Séricicole. Silk, a precious commodity, had old titles of nobility. The role it had played in past centuries in the economic as well as cultural floruit of the neighbouring Italian peninsula was well known, just as the glory of historic Mystras, centre of silkworking in the Byzantine Age, must have been keenly appreciated.<sup>172</sup> With the renewed demand in the nineteenth century it was inevitable that silk, a national resource, should be identified with the vision of the country's (economic) 'renaissance', in the wake of its liberation from the Ottoman Empire.

Even so, business is business, and the Société Séricicole had to face from the outset the problem of the rapid rise in the price of cocoons; a similar problem would be faced by most Greek industries involved with processing domestic agricultural products, since they had to deal with a mercantile economy open to the currents of the international markets, as the Greek economy was. The model of the protected home market, that had been applied *inter alia* in the Duchy of Tuscany –with which Durutti was familiar– at the beginning of the century (but was abandoned from as early as 1819), had no place in Greece in the 1850s. The access to political power proved inadequate for stemming the tide of developments that set their seal on the Greek economy from the nineteenth century onwards, not least because Durutti's views did not have the consensus of the political leadership.

We could say that from a macroscopic viewpoint the Athens silkmill was doomed. The same reasons that had led the British company to Greece, impelled the final linking of silk-reeling to the silk-rearing provinces of Greece, despite the changes concentration in factories had brought. Whereas the silkmills in Athens and Piraeus closed down, those in Kalamata and Sparta kept going for many years to come, until reeling was concentrated almost exclusively in one region even more intensely rural in character, Soufli (in Thrace).

Changes in the economic milieu are, however, extraneous parameters to the business, to which it reacts; they do not predetermine its course.

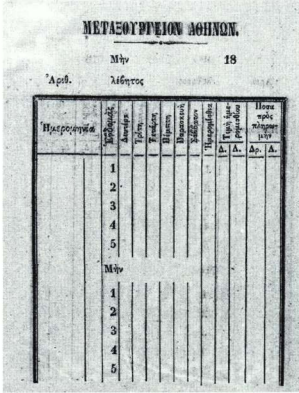
172. Mystras during the 14th century has recently been characterized as: 'Centre of the Greek renaissance, in the footsteps of the Italian...', see V. Panayotopoulos, *La culture du mûrier en Grèce. L'exemple de Mistra (XIIIe-XIXe siècles, Culture and commercial exchanges between the Orient and the Greek world, I.N.R./N.H.R.F., Athens 1991*, 35. On the contribution of another important person in the Greek national pantheon, Andreas Calvos, founder member of the Corfiote Società serica in 1846-47, in the promotion of silk-reeling, see Σπ. Ασδραχάς, *Ανδρέας Κάλβος, Ανέχδοτα και αθηναϊκίστα κείμενα* [Sp. Asdrachas, Andreas Calvos, Unpublished and miscellaneous texts], *Εφηντιστής*, year II (1964), iss. 9/10, 104.

Moreover, entrepreneurial praxis is determined more by circumstantial transformations and less by long-term trends. These latter seem to have been understood by Athanasios Durutti in the end, but only after the demise of the Société Séricicole and a protracted period of the factory under-operating. The strategy he mapped out in the early years endeavoured to solve the problems of under-operating and upheavals in the market in two ways: by diversifying production and by turning towards the home market.

The specific way in which a business faces the changing external conditions (and on which in the end its survival depends) is not interpreted by economic theory alone. It alludes to those issues that make business activity exclusively an historical phenomenon and for this reason ‘spatially uneven’.<sup>173</sup> From the viewpoint of business strategy theory, in the case of excess capacity one of the possible answers is diversification of production.<sup>174</sup> However, the new investment made in view of diversification is much more lucrative (that is the cost is less in relation to the expected benefits) when it utilizes the excess capacity and the know-how available within the business. This was not the case with the Athens silkmill: the company bought new land and put up new buildings, and in the end it used neither the ‘surplus’ power of the steam engine, nor the available know-how, since the new activity had only the faintest connection to the original one: the most that can be claimed is that they exploited in part the existing mercantile networks.

The historical parameters that determined the choices of the Société Séricicole are connected with the qualifications of the businessmen who managed it, as well as with the nature of the economy to which it belonged. By way of parenthesis, it should be emphasized here that the Durutti brothers can be considered true entrepreneurs, in the sense of men who introduce innovations, are bearers of change and operate more with intuition and boldness, while the rest of shareholders rather belong to the type of *hommes d'affaires* (which is in no way unusual).<sup>175</sup> Neither of them, however, was a true manager, and this was perhaps the element notably lacking from the Athens silkmill.

It is nevertheless obvious that the company did not have the necessary resources to turn towards more compatible activities, such as spinning and weaving the silk, that is the vertical integration of production. The few indications we have attest that something of the sort was attempted, but without success. The company did not have the possibilities of penetrating the highly competitive international market of processed silk products and the home market did not have the required absorption capacity. Securing quotas in the international yarns and textiles market entailed taking a major risk as well as additional expense, but mainly it demanded excellent networking in order to obtain essential information on the kind of demand in each market and changes in consumer preferences.<sup>176</sup> At this level the Société Séricicole presented a static picture overall, with a fairly unilateral dependence on one



12. Blank pay sheet from the silkmill, with no other indication. It is not clear whether it is a page from a book or a separate form. 11 x 14.5 cm. (Chr. Zioulas Collection).

173. On the formulation, see R. Burrows (ed.), *Deciphering the enterprise culture. Entrepreneurship, petty capitalism and the restructuring of Britain*, Routledge, London 1991, 3.

174. See in connection Scott Moss, *An economic theory of business strategy: an essay in dynamics without equilibrium*, Wiley, New York, 1981.

175. See in connection: P. Temin, *Entrepreneurs and managers*, P. Higgonet, D. Landes, H. Rosovsky (eds), *Favorites of fortune: technology, growth and economic development since the industrial revolution*, Harvard University Press, 1991, 339-355.

176. Through strategic penetration of the international market, through ongoing reorientations and adaptations to the kind of products, through repeated swings from one market to another and through successive alliances with foreign companies, the Scotis firm in Pescia managed to come of age and survive many crises, see R. Tolaini, op. cit.

customer for its silk, the Frères Souchon firm, and it made no attempt to widen its network abroad beyond the circle of Greek merchants, whose position in the silk market was far from strong. Moreover, it managed to wreck its most critical relationship with Lyons, through its litigation against Louis Roeck.

Instead of the risky opening to foreign markets, the Société Séricicole preferred the security of the domestic demand for staple products, with which its managers also felt more at home, and especially Constantine Durutti, who certainly knew the markets and the networks of the related trade. So the Athens silkmill spread even more in space. In the end it was transformed into a complex for processing various agricultural products, like those being set up in provincial towns or on great estates (such as Nikolaos Kokoslis's silkmill at Lechonia) during this period. In a sense it 'was ruralized' even more. But in the meanwhile the expansion of Athens had begun.

The specific site, the opposing propensities for its appropriation, and all that nexus of actions that intermediate between the decision to the realization of business activity are enhanced as basic parameters for the final fate of the silkmill. The decision to found it was taken at a time when the city of Athens was merely a geographical node, a dot on the map, that satisfied certain specifications on the temporal-spatial scale. As the scale was focused and implementation of the decision began, the specific place imposed its own parameters: from the technical standpoint that of available resources (water) and proximity to means of transport; as an economic space, the nature of its own demand (staple products); and as an urban space, its own character (capital of the state, place of housing and workshops).