

alum—for 'cord' and 'pit' mean the same thing, and this 'cord' is fine-grained alum. And another kind is cord alum—that is, pit [alum]—which is the finest-grained alum that exists.⁴⁴

And alum of Phocaea is almost like choice alum [of Karahissar], for Phocaea also makes a mixture by mingling together its alum, and it is about two fifths rock and three fifths cord. And [Phocaea] manufactures about 14,000 *cantara* of Genoa every year.

Alum of Ulubad is manufactured in a place in Turkey this side of the Black Sea, [close] to the Sea of Marmora, and it goes to a port on the shore, in a locality named Trilia. And it is a fairly large alum, considerably larger than the large [alum] of Ayassolük or that of Kutahieh. And it takes four days in coming from the interior. And [Ulubad] manufactures 10,000 Genoese *cantara* of it every year.

Alum of Kutahieh, in Turkey, goes to the ports of Ayassolük and of Palatia in Turkey. And it is fairly large and fine-grained mingled together, like that of Ulubad, but [on the whole] it is more finely grained than that of Ulubad. And some people call it Kutahieh and some [call it after] various Turkish places, and some [call it after] Ayassolük; but its correct name is Kutahieh because it comes from the region of Kutahieh in Turkey. And [Kutahieh] manufactures about 12,000 *cantara* of Genoa of it every year.

Cyzican alum comes from and is manufactured on the Sea Island, that is, on an island in the [Sea of] Marmora.⁴⁵ And there is little of it, and it is a very poor ware, and it is more [fit] for tanning leather than for anything else. And many alums are named Cyzican because they are very poor and fine-grained, but the one we are speaking of here is the true one. And [the Sea Island] manufactures about . . .⁴⁶ *cantara* of it every year.

Diaschilo alum and cord alum—that is, pit [alum]—together with the Cyzican, are the worst kind of alum that come down from the Black Sea of the Byzantine Empire. And as we said, every kind of alum, according to its grade, the more it includes large [lumps] and few fine ones, and the more it is white and clear and glistening and clean of stones and sand, the better it is and the more it is worth.

⁴⁴ The meaning of this passage is made clear by Pegolotti's description of alum manufacturing in Phocaea, p. 368: 'Rock alum is attached like ice to the wall of the said vat . . . pit alum is found at the bottom of the said vat.' *Corda* is probably a Greek or Turkish word which we have been unable to identify.

⁴⁵ Inasmuch as the extant ruins of Cyzicus are on the mainland, Cyzican alum can hardly have been from Cyzicus itself, as Evans suggests. More probably it came from the nearby Islands of the Princes; cf. Heyd, *Histoire du commerce du Levant*, II, 566ff. Diaschilo, the source of another inferior alum which is mentioned immediately after, is modern Eskel Liman, also on the Sea of Marmora.

⁴⁶ The gap is in the manuscript from which the edition was made.

And [note that] about 4,000 *cantara* of alum of Kutahieh also come down to Adalia in Turkey. And it comes from Kutahieh to Adalia by land [in] fourteen carriers' days.

Alum of Castiglione,⁴⁷ which in Florence is called feather alum, comes from Barbary. . . .⁴⁸ And it has this characteristic, that when alum of this kind is manufactured, the longer it is preserved the better and purer it becomes. And all that [material] that looks like earth, if it remains and is preserved in an earthen place with propping underneath, it becomes white alum, rather elongated and glistening, [so] that to the sight it looks like a feather; and therefore it is called feather alum. And some people say that if it is preserved it grows in weight.

Traveling to China

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Francesco di Balduccio Pegolotti, *The Practice of Commerce*
From the Italian⁴⁹

[Florence, between 1310 and 1340]

ADVICE ABOUT THE JOURNEY TO CATHAY BY THE ROAD THROUGH TANA [AZOV],

[FOR MERCHANTS] GOING AND RETURNING WITH WARES

First [of all], from Tana to Astrakhan it is twenty-five days by ox wagon, and from ten to twelve days by horse wagon. Along the road you meet many Mongolians, that is, armed men.⁵⁰

And from Astrakhan to Sarai it is one day by water on a river, and from Sarai to Saraichuk it is eight days by water on a river. And you can travel

⁴⁷ 'Barbary' alum was well known, sometimes under the names of Tlemcen, Tunis, or Bougie—actually it came from the interior, usually by the way of Sijilmasa—but Evans's tentative identification of Castiglione with Castilia, a Christian settlement in Tunisia, is untenable. There is no indication that Castilia was a trading place. Perhaps Pegolotti confused Barbary alum with alum from Castile. This also was a well-known alum, but definitely inferior to those of the Levant and North Africa.

⁴⁸ We omit here a few details on the extraction of this kind of alum.

⁴⁹ Pegolotti, *Pratica*, pp. 21–23. A translation of this passage was included in H. Yule, *Cathay and the Way Thither*, II, 287–95, and has been reprinted in many medieval anthologies. Ours is a new translation.

⁵⁰ One would think at first that the presence of armed Mongolian guards was an indication of the security of the road. That it was not necessarily so is shown by another short sentence of Pegolotti, p. 29, referring to the road from Ayas to Tabriz: 'And for extortions made along the way by Mongolians, that is, Tatar rangers, you may reckon about 50 *aspri* per packload.' It is true that this road was in the territory of the khan of Persia, whereas the road from the Crimea to China went successively through the territories of the Kipchak khanate, Turkestan, and China.

[both] by land and by water, but people travel by water to spend less [on transportation] of wares.

And from Saraichuk to Urjench it is twenty days by camel wagon—and for those who are carrying wares it is convenient to go through Urjench, because that is a good market for wares—and from Urjench to Utrar it is from thirty-five to forty days by camel wagon. And should you leave Saraichuk and travel straight to Utrar, you would travel fifty days; and for one who has no wares it would be a better way than traveling through Urjench.

And from Utrar to Almaligh it is forty-five days by pack asses. And you meet Mongolians every day.

And from Almaligh to Kan-chow it is seventy days by asses.

And from Kan-chow to a river called . . .⁵¹ it is forty-five days by horses.

And from the river you can travel to Quinsay [Hang-chow] and sell there any silver *sommi*⁵² you have, because that is a good market for wares. And from Quinsay on you travel with the money you get for the silver *sommi* you have sold there, that is, with paper money. And said money is called *balisci*;⁵³ four of these are worth one silver *sommo* throughout the country of Cathay.

And from Quinsay to Khanbaligh [Peking], which is the master city in the country of Cathay, it is thirty days.

THINGS NECESSARY FOR A MERCHANT WISHING TO MAKE THE SAID JOURNEY TO CATHAY

First [of all], it is advisable for him to let his beard grow long and not shave. And at Tana he should furnish himself with dragomans, and he should not try to save by hiring a poor one instead of a good one, since a good one does not cost. . . .⁵⁴ And besides dragomans he ought to take along at least two good menservants who know the Cumanic tongue well. And if the merchant wishes to take along from Tana any woman with him, he may do so—and if he does not wish to take one, there is no obligation; yet if he takes one, he will be regarded as a man of higher condition⁵⁵ than if

⁵¹ The dots are Evans's. Probably the Yangtze.

⁵² A *sommo* was both a silver ingot and the money of account of the Kipchak khanate. It corresponded to the weight of 202 *aspri* (real coins), but the mint in Tana when receiving from private parties an ingot weighing a *sommo* delivered only 190 *aspri*, keeping back the rest for seigniorage. A Genoese statute of 1304 reckoned the Kipchak *aspro* at ten Genoese deniers.

⁵³ *Balis* or *balish* in Arabic. On Chinese paper money in the Mongol period, see now H. Franke, *Geld und Wirtschaft in China unter der Mongolen-Herrschaft*, with Bibliography.

⁵⁴ *Il buono non costa quello d'ingordo che l'uomo non—s'ene megliori via più*. The text is obviously corrupt, but it seems to mean that a poor dragoman would be greedy (*ingordo*), so that a good dragoman, though asking for a higher salary, would actually cost less.

⁵⁵ *Sarà tenuto di migliore condizione*. Yule translates: 'he will be kept much more comfortably;' but *tenere* in this context means 'to hold, to esteem.'

he does not take one. If he takes one, however, she ought to know the Cumanic tongue as well as the manservant. And [for the stretch] from Tana to Astrakhan he ought to furnish himself with food for twenty-five days—that is, with flour and salt fish, for you find meat in sufficiency in every locality along the road. And in like manner, wherever you go in said journey from one country to another according to the aforesaid [number of] days, you ought to furnish yourself with flour and salt fish; for other things you find in sufficiency, and especially meat.

The road leading from Tana to Cathay is quite safe both by day and by night, according to what the merchants report who have used it—except that if the merchant should die along the road, when going or returning, everything would go to the lord of the country where the merchant dies, and the officers of the lord would take everything—and in like manner if he should die in Cathay. Actually if he had a brother or a close associate⁵⁶ who could say that he is a brother, the property of the dead man would be given to him, and in this manner the property would be rescued. And there is still another danger; that is, should the lord die [and] until the new lord who is to rule has been sent for,⁵⁷ in that interval sometimes a disorder⁵⁸ occurs against the Franks and other foreigners—they call 'Franks' all Christians of countries from the Byzantine Empire westwards—and the road is not safe until the new lord is sent for who is to reign after the one who died.

Cathay is a province where there are many towns and many villages. Among others there is one which is the master city, where merchants convene and where is the bulk of trade. And this city is called Khanbaligh. And said city has a circuit of one hundred miles and is all full of people and houses, and of dwellers in the said city.

It is reckoned that a merchant with a dragoman and two menservants and goods to the value of 25,000 gold florins would spend as far as Cathay, if he wishes to economize, from 60 to 80 silver *sommi*; and for the entire return journey from Cathay to Tana, including expenses for food, and salary of menservants, and all [other] expenses connected with it, 5 *sommi* per pack-load or [even] less. And the *sommo* may be evaluated at about 5 gold florins. And it is reckoned that each [ox]wagon will require only one ox, [such] a

⁵⁶ *Stretto compagno* (Yule: 'intimate friend and comrade') means both a partner (*compagno*) and a friend. The Venetian merchants en route to Delhi through Mongol territory (see Document 149) adopted the stratagem suggested by Pegolotti.

⁵⁷ *Chiamato*, which Yule translates 'proclaimed.' But the rules of Mongol succession to the throne required all relatives of the dead khan to be summoned from the distant provinces to an assembly which elected the new khan.

⁵⁸ *Novitade*, meaning 'riot,' 'disorder,' and not 'irregularity,' as Yule translates.

wagon carrying 10 Genoese *cantara*; and a camel wagon requires three camels, the wagon carrying 30 Genoese *cantara*; and a horse wagon requires one horse, the wagon usually carrying $6\frac{1}{2}$ Genoese *cantara* of 250 Genoese pounds [each]. And a bundle (*scibetto*) of silk is reckoned at about 110 to 115 Genoese pounds.

It is reckoned that from Tana to Sarai the road is less safe than all the rest of the journey. But should there be sixty men [in the caravan], [even] when the road is in its worst condition you would travel as safely as [if you were] in your own home.

Anyone wishing to leave from Genoa or from Venice in order to travel to the said places and journey to Cathay would do well to carry linen and go to Urjench, and to buy *sommi* in Urjench and proceed with these without investing [them] in any other merchandise, unless he has a few bales of the very finest linens, which are not bulky and require no greater expense [for carriage] than would any coarser linens.

And the merchants on their way may ride a horse or a donkey or whatever animal they like to ride.

All silver which the merchants carry [with them] when going to Cathay, the lord of Cathay causes to be withdrawn and placed in his treasury; and to the merchants who bring it in he gives paper money, that is, yellow paper struck⁵⁹ with the seal of said lord, that money being called *balisci*. And with said money you may and can purchase silk and any other merchandise or goods you may wish to buy. And all the people of the country are bound to accept it, and yet people do not pay more for merchandise although it is paper money. And of the said paper money there are three kinds, one being worth more than another according as the lord orders them to be worth.

And it is reckoned that you will get in Cathay from nineteen to twenty pounds of Cathay silk according to Genoese weight for one silver *sommo*, the *sommo* being of the weight of about $8\frac{1}{2}$ Genoese ounces and of the alloy of 11 ounces and 17 deniers fine to the pound. And it [also] is reckoned that you will get in Cathay from three to three and a half pieces of *camaca* silk [cloth] for one *sommo* and from three and a half to five pieces of *na-che-che* silk and gold [cloth] for one silver *sommo*.⁶⁰

⁵⁹ *Coniata*; Pegolotti is unfamiliar with a money which is not struck and uses the technical expression for 'striking' metallic money.

⁶⁰ It is not sure that *camaca* was damasked silk, as Yule translates. For this term and the term *na-che-che* (Italian *nacchetti*), see Evans's Glossary. On silk prices in Europe, see R. S. Lopez, 'China Silk in Europe in the Yuan Period,' *Journal of the American Oriental Society*, LXXII (1952), 72-76.

CHAPTER XXII

THE PROGRESS OF ACCOUNTING METHODS

RECENT STUDIES have reversed the unfavorable judgment which some scholars had passed upon medieval bookkeeping. Even the crudest memoranda of the early thirteenth century are clear enough and contain only a fairly small proportion of errors.¹ During that century and the early fourteenth the methods of accounting advanced by leaps and bounds. Credit and debit entries were posted separately, at first in different sections of a ledger, then one above the other, then side by side. A page or a number of pages were reserved for the accounts of each customer, and alphabetic indexes of accounts were provided. Every entry was listed in various ledgers, cross references were included, and in time the principle was adopted that a debit entry should correspond to every credit entry. The addition of impersonal accounts permitted the keeping of records for tangible assets and operating costs. Thus the most advanced techniques of double-entry bookkeeping gradually came into being. Against the prevalent theory that Genoa was their birthplace, it has been recently argued that double-entry bookkeeping originated in thirteenth-century Tuscany. Be that as it may, the earliest extant ledgers in which the new system of accounting is fully developed come from Genoa in the early fourteenth century. The other Italian cities had similar ledgers before the end of the century. Other countries were much slower in adopting the new techniques. Though it would be a gross exaggeration to ascribe to the revolution in accounting a decisive influence in gaining for the Italians a virtual monopoly of foreign trade in Western Europe, it can hardly be doubted that improved tools helped the hands which had shaped them and which employed them skillfully.²

¹ The earliest extant fragment of commercial accounting comes from Genoa, 1156-1158; see the excellent edition and comment of G. Astuti, *Rendiconti mercantili inediti del cartolare di Giovanni Scriba*; the book was reviewed by F. Edler de Roover, 'Partnership Accounts in Twelfth Century Genoa,' *Bulletin of the Business Historical Society*, XV (1941), 87-92. But the fragment consists of informal calculations jotted down with a view to dividing the profits of *commenda* operations, and hence it cannot be regarded as regular bookkeeping. An entry from the earliest extant accounting book (1211) has been included in Document 74.

² The best works on this subject are R. de Roover, 'Aux origines d'une technique intellectuelle: la formation et l'expansion de la comptabilité à partie double,' *Annales d'Histoire Economique et Sociale*, IX (1937), 171-93, 270-98, and F. Melis, *Storia della ragioneria*. Both contain ample bibliographic information; Melis also has included in his book a great wealth of unprinted source material. The theory of a Tuscan origin of double-entry bookkeeping is propounded by Melis, pp. 425ff. But new arguments in behalf of Genoa have been offered by R. L. Reynolds, 'Bankers' Account in Double-Entry in Genoa, 1313 and 1316,' *Bollettino Ligustico per la Storia e la Cultura Regionale*, III (1951), 33-37. The question cannot be regarded as definitely solved.