

## Metals

Any study of the metal trade into Anatolia is severely hampered by lack of data. This is due not only to the haphazard survival of documents, something which affects all research into all aspects of this area and period, but also to the banning by governments and church of Christian trading of metals with the infidel. The arms trade is particularly difficult to trace. Weapons clearly did arrive in Anatolia. Aşıkpaşazade refers to there being no firearms in the reign of Bayezid, but plenty in the time of the sultans Murad II and Mehmed II.<sup>1</sup> The Genoese were known to be importing large quantities of arms into the Levant,<sup>2</sup> though this does not mean that they were necessarily trading them with the Turks.<sup>3</sup> So far no reference to arms trading with the Turks has been found in the Genoese sources for this period. An added complication when tracing the movement of metals is the fact that the origin of the metals traded is often not given.

Nevertheless, there clearly was a metal trade between western merchants and Muslim powers for the constant repetition of papal bans against the export to the infidel of forbidden commodities, that is foodstuffs and war materials including metals, is an indicator of a persistent trade, conducted in defiance of papal prohibition<sup>4</sup> and, one must assume, therefore profitable.

Iron, a major import from the west, and goods made from iron were one of the most important commodities traded by the Genoese.<sup>5</sup> Western merchants seem to have been largely unconcerned by religious scruple over this commerce. Pope Gregory XI was obliged, in 1373, to direct a threat of

<sup>1</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 60, Aşıkpaşazade, *Tevarih-i al-i 'Osman*, p. 66, ll. 3–4.

<sup>2</sup> Balard, *Romanie génoise*, vol. II, pp. 782–3, 840–1.

<sup>3</sup> For the trading of guns into the Ottoman empire in the fifteenth century see Gábor Ágoston, 'Ottoman artillery and European military technology in the fifteenth and seventeenth centuries', *Acta Academiae Scientiarum Hungaricae* 47 (1994), 15–48. See also Colin Heywood, 'Notes on the production of fifteenth century Ottoman cannon', in *Proceedings of the International Symposium on Islam and Science (Islamabad)* (Islamabad, 1981).

<sup>4</sup> Governments too forbade such exports. The Venetians banned the export of iron and plough shears: 1389.vi.22 = Chrysostomides, *Monumenta Peloponnesiaca*, no. 51, p. 112.

<sup>5</sup> Balard, *Romanie génoise*, vol. II, pp. 782–3, 840–1.

excommunication against those Christians who were trading iron to the Turks.<sup>6</sup> Papal permission, granted in 1363, to the Hospitallers to import foodstuffs from the Turks, contained the proviso that the Hospitallers should not, in return, trade war materials, including iron.<sup>7</sup> It is unlikely that the Hospitallers supplied their enemies with weapons, this clause being probably a stock phrase used by the popes when granting such permission. However, this does show how much of a threat the trade in war materials, largely metals, was considered to be by the church.

Regardless of papal sentiment, iron was sold throughout the Levant, in Lesser Armenia,<sup>8</sup> Crete,<sup>9</sup> Constantinople, Pera<sup>10</sup> and Caffa,<sup>11</sup> and in Turchia, in Antalya<sup>12</sup> and Bursa.<sup>13</sup> Iron wire (*fil de fero*) fetched 1 *hyperpyron* per bundle (*mazo*) in Bursa in the late 1430s,<sup>14</sup> the price being comparable with that of iron wire on its way to Caffa in the same period.<sup>15</sup> In Caffa itself the price was slightly higher at around 1.2 *hyperpyra* per *mazo*.<sup>16</sup>

Iron was not the only metal brought into the eastern Mediterranean, for lead too came in from the west, traded from Ragusa to Alexandria, to the Levant and into Syria<sup>17</sup> and sold in the markets of Alexandria,<sup>18</sup> Crete, Pera and Constantinople,<sup>19</sup> from where it was taken to Crete.<sup>20</sup> It sold too in

<sup>6</sup> 1373.v.15 : G. Mollat, *Lettres secrètes et curiales du Pape Grégoire XI (1370–1378)*, Bibliothèque des Ecoles Françaises d'Athènes et de Rome, 3 fascicules (Paris, 1962–5), fasc. I, no. 1798, p. 252.

<sup>7</sup> 1363.vii.17 = Michel Hayez, *Urbain V (1362–1370), lettres communes*, Bibliothèque des Ecoles Françaises d'Athènes et de Rome (Paris, 1964–72), vol. II, fasc.I–IV, no. 6420, p. 207.

<sup>8</sup> Pegolotti, *Pratica*, p. 59. <sup>9</sup> Pegolotti, *Pratica*, p. 105.

<sup>10</sup> Pegolotti, *Pratica*, p. 33. *Fil de fero* was sold in Constantinople: 1436.vi.26 = Badoer, *Libro*, col. 29, p. 58, col. 68, p. 137; 1437.vi.23 = *ibid.*, col. 68, p. 136, col. 137, p. 277.

<sup>11</sup> 1437.vii.1 = Badoer, *Libro*, col. 79, p. 160, col. 68, p. 137; 1437.ix.19 = *ibid.*, col. 79, p. 160, col. 68, p. 137; 1437.xii.5 = *ibid.*, col. 154, p. 310, col. 79, p. 161; 1438.iv.29 = *ibid.*, col. 196, p. 394, col. 189, p. 381; 1439.i.15 = *ibid.*, col. 367, p. 737, seems to be coming back from Caffa: 'per fil de fero che me fo tornà de Caffa'; 1439.iii.5 = *ibid.*, col. 325, p. 652, also seems to be returning from Caffa: 'fil de fero barilli 3 dixè eser mazi 416 . . . mandadome de Chafa'. This presumably means that it was not sold, since there is an entry on the same day for expenses for the *barilli* 'andar e retornar'.

<sup>12</sup> Pegolotti, *Pratica*, p. 58: sold by 'peso del calbano, cioè la stadera'.

<sup>13</sup> 1439.vii.8 = Badoer, *Libro*, col. 325, p. 652; 1439.ii.15 = *ibid.*, col. 348, p. 698, col. 325, p. 653.

<sup>14</sup> 1439.iii.7 = Badoer, *Libro*, col. 329, p. 660, col. 325, p. 653.

<sup>15</sup> 1437.vii.1 = Badoer, *Libro*, col. 79, p. 160.

<sup>16</sup> 1437.xii.5 = Badoer, *Libro*, col. 79, p. 161.

<sup>17</sup> 1359.viii.30 : Kerkić, *Dubrovnik*, doc.241, p. 203; 1410.vi.25 : *ibid.*, doc. 585, pp. 259–60 refers to 1,230 pieces of lead at a weight of 143,465 Ragusan pounds; 1389.vi.23 : *ibid.*, doc. 392, p. 228, refers to 231 pieces of lead weighing 23,500 pounds 'ad pondus grossum Venetiarum', and to 714 pieces of lead weighing 100,945 pounds at the weight of Ragusa; 1377.xi.29 : *ibid.*, doc. 330, p. 218.

<sup>18</sup> Pegolotti, *Pratica*, p. 70; 1347.viii.11 = Zucchello, *Lettere*, doc. 44, p. 87.

<sup>19</sup> Pegolotti, *Pratica*, pp. 105, 33. Lead of 'every region' was sold in Pera and Constantinople. 1437.viii.27 = Badoer, *Libro*, col. 95, p. 192, col. 50, p. 101; 1438.iii.21 = *ibid.*, col. 83, p. 168, col. 62, p. 125.

<sup>20</sup> 1438.iii.21 = Badoer, *Libro*, col. 198, p. 398, col. 62, p. 125.

Turchia and the Genoese traded it in Balat around the end of the fourteenth and beginning of the fifteenth centuries.<sup>21</sup>

Other metals were also shipped into the Levant. The Venetians traded tin into Alexandria and Syria<sup>22</sup> and, like iron and lead, it too appeared in the markets of the eastern Mediterranean, in Alexandria,<sup>23</sup> Beirut,<sup>24</sup> Damascus,<sup>25</sup> Crete, Lesser Armenia and Constantinople and Pera, where tin 'of every region' was sold.<sup>26</sup> The Genoese imported it into Balat<sup>27</sup> and it was also sold in Antalya.<sup>28</sup> Copper was brought into the Levant from Ragusa<sup>29</sup> and into Egypt from Venice, and sold in Alexandria.<sup>30</sup> Frescobaldi travelled from Venice to Alexandria on a ship whose cargo, loaded in Venice, included copper.<sup>31</sup>

It has been assumed that the trade in metals from the west into Turchia was of greater significance or volume than the sources appear to show, due to its illegality and consequent concealment combined with the haphazard survival of data. However, the comparatively scanty evidence on the trading of metals may suggest that there was not in fact a large commerce in these commodities. If its illegality had been a factor of such importance, metals would presumably not have appeared at all in lists of commodities exported eastwards. Further, Turchia does not appear always to have been a sure market for metals, for on occasion imported metals remained unsold there,<sup>32</sup> indicating that Turchia was not suffering from a dearth of metals, such as would have attracted a large flow of imports.

The most striking indication that the trade in imported metals was not perhaps as great as has sometimes been assumed was the fact that the Levant was in a position to export. One of the main commodities that the

<sup>21</sup> Piloti, *L'Egypte*, p. 72.

<sup>22</sup> 1400.viii.30 : Heers, 'Commercio', 167, 168.

<sup>23</sup> Heers, 'Commercio', 205; 1347.viii.11 = Zucchello, *Lettere*, doc. 44, p. 87.

<sup>24</sup> Heers, 'Commercio', 205. <sup>25</sup> *Ibid.*

<sup>26</sup> Pegolotti, *Pratica*, pp. 70, 105, 59, 33; 1436.ix.6 = Badoer, *Libro*, col. 8, p. 16, col. 17, p. 35, col. 4, p. 9 (this presumably was imported into Constantinople because the costs cited included unloading); 1436.xi.4 = *ibid.*, col. 9, p. 18, col. 17, p. 35, col. 4, p. 9; 1436.ii.5 = *ibid.*, col. 50, p. 100, col. 50, p. 101; 1436.ii.22 = *ibid.*, col. 50, p. 100, col. 170, p. 343; 1436.iii.22 = *ibid.*, col. 49, p. 98, col. 50, p. 101; 1437.ix.19 = *ibid.*, col. 107, p. 216, col. 174, p. 351, col. 161, p. 325; 1437.x.17 = *ibid.*, col. 89, p. 180, col. 107, p. 217; 1437.x.17 = *ibid.*, col. 127, p. 256, col. 107, p. 217; 1437.xi.7 = *ibid.*, col. 128, p. 258, col. 107, p. 217; 1437.xii.5 = *ibid.*, col. 107, p. 216, col. 163, p. 329; 1437.xii.28 = *ibid.*, col. 168, p. 398, col. 107, p. 217; 1437.ii.4 = *ibid.*, col. 173, p. 348, col. 107, p. 217; 1437.ii.8 = *ibid.*, col. 175, p. 352, col. 107, p. 217; 1437.ii.10 = *ibid.*, col. 139, p. 280, col. 107, p. 217; 1438.iii.4 = *ibid.*, col. 107, p. 216, col. 28, p. 57.

<sup>27</sup> Piloti, *L'Egypte*, p. 72.

<sup>28</sup> Pegolotti, *Pratica*, p. 58.

<sup>29</sup> 1389.vi.23 : Krekić, *Dubrovnik*, doc. 392, p. 228 refers to 4,864 pieces of fine copper weighing 60,000 pounds 'ad pondus grossum Venetiarum' and 140 pieces of copper weighing 1,541 pounds.

<sup>30</sup> 1347.viii.11 = Zucchello, *Lettere*, doc. 44, p. 87.

<sup>31</sup> Frescobaldi, *Visit to the Holy Places*, p. 35.

<sup>32</sup> Three *barili* of *fil de fero* returning from Caffa, 1439.iii.5 = Badoer, *Libro*, col. 325, p. 652. 38 *mazi* of *fil de fero* imported into Bursa were left with Piero Palavexin, apparently unsold, 1439.ii.15 = *ibid.*, col. 348, p. 698, col. 325, p. 653., col. 388, p. 788, col. 348, p. 699.

Venetian galleys carried home from Romania was its metals.<sup>33</sup> Anatolia was after all a metal-producing and exporting country in its own right. It had metal resources, copper, iron and silver in particular.<sup>34</sup> There were silver mines at Bayburt, south-east of Trabzon, Gümüşhane (Argiron, south of Trabzon) and at Amasya.<sup>35</sup> Iron was produced around İzmir in Byzantine times.<sup>36</sup>

Copper was mined in north-east Anatolia in the region of Kastamonu, Sinop, Samsun and Osmancık and was of high quality, for Chalcocondyles described it as second only to that of Iberia.<sup>37</sup> These copper resources were a bone of contention between local rulers and the expanding Ottoman state. The copper mines around Kastamonu were initially, in the fourteenth century, in the hands of the local rulers, the İsfendiyaroğulları, control passing to the Ottomans at the end of the century when, in 1391, Bayezid I killed Süleyman Paşa, the İsfendiyaroğulları ruler of Kastamonu, and took over his territory.<sup>38</sup> Osmancık fell to Bayezid in the same period,<sup>39</sup> although he apparently failed to conquer Sinop.<sup>40</sup> He may however have exerted some control over the area for the ruler in Sinop, the son of Kötürüm Bayezid, former İsfendiyaroğulları ruler, was in some way subordinate to him.<sup>41</sup> That Bayezid exercised influence over Sinop is supported by Chalcocondyles who refers to Bayezid taking over the revenue of the copper mines there.<sup>42</sup>

<sup>33</sup> Heers, 'Commercio', 170. Both lead and copper were taken from Grecia back to Venice: *ibid.*, 169.

<sup>34</sup> For a discussion of mines in Anatolia and the Balkans see S. Vryonis, 'The question of Byzantine mines', *Speculum* 37 (1962), 1–17.

<sup>35</sup> Abu'l Fida, *Géographie d'Aboulféda*, ed. M. Rainaud and M. Le Bon Mac Guckin de Slane (Paris, 1840), p. 383; Aflaki, *Les saints des derviches tourneurs (Manaqib ul-'arifin)*, trans. Clément Huart (Paris, 1918) vols. I–II: vol. II, p. 380; ibn Battuta, *Voyages*, p. 293; al-'Umari, 'Voyages', pp. 20, 31.

<sup>36</sup> Hélène Ahrweiler, 'L'histoire et la géographie de la région de Smyrne entre les deux occupations turques (1081–1317) particulièrement au XIII<sup>e</sup> siècle', *Travaux et Mémoires* 1, Centre de Recherche d'Histoire et Civilisation Byzantines (Paris, 1965), 18.

<sup>37</sup> Chalcocondyles, *Historiarum Libri Decem*, ed. I. Bekker (Bonn, 1843), p. 498, l. 6.

<sup>38</sup> Imber, *Ottoman Empire*, p. 38 dates Süleyman's death to pre-July 1391. Neşri, dates Bayezid's conquest of Kastamonu to 795/1393: Neşri, *Menzel, Cod.* p. 77; Neşri, *Kitab-ı Cihan-nüma*, vol. I, p. 320. Aşıkpaşazade, dates it to between 797 and 798: Aşıkpaşazade, *Altosmanische Chronik*, p. 65, Aşıkpaşazade, *Tevarih-i al-i 'Osman*, p. 72. Süleyman was trading copper with Genoese merchants: 1390.i.11 = ASG, Notario, Donato de Clavaro, C. 476, doc. 26. A summary of this document is given in Balard, Laiou and Otten-Froux, *Documents*, no. 82, p. 37.

<sup>39</sup> Imber, *Ottoman Empire*, p. 39; Neşri, *Menzel, Cod.* p. 58; Neşri, *Kitab-ı Cihan-nüma*, p. 322.

<sup>40</sup> Imber, *Ottoman Empire*, p. 40.

<sup>41</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 65; Aşıkpaşazade, *Tevarih-i al-i 'Osman*, p. 72; Neşri, *Menzel, Cod.* p. 58; Neşri, *Kitab-ı Cihan-nüma*, p. 322.

<sup>42</sup> Chalcocondyles, *Historiarum Libri Decem*, p. 185, l. 5, Chalcocondyles, *Historiarum Demonstrationes*, ed. E. Darkó (Budapest, 1922–7), vol. I, pp. 173–4. Chalcocondyles *Historiarum Libri Decem*, p. 489, l. 6, and *Historiarum Demonstrationes*, vol. II, p. 242 says that when Mehmed II conquered Sinop in the middle fifteenth century, the annual tax income from the mines was 50,000 gold pieces.

Towards the end of his reign, Bayezid also annexed Samsun<sup>43</sup> while Amasya was seized from Burhan al-Din in 1398.<sup>44</sup>

After the Ottoman collapse of 1402 Kastamonu and Samsun reverted to İsfendiyaçoğulları control while Amasya remained in Ottoman hands.<sup>45</sup> Mehmed I campaigned against the İsfendiyaçoğulları and took Samsun.<sup>46</sup> The İsfendiyaçoğulları ruler became subordinate to Mehmed, retaining land round Sinop but surrendering the copper revenues of Kastamonu to the Ottoman ruler.<sup>47</sup> In the period of civil strife in 1421–2, the İsfendiya ruler, Mübarizeddin, occupied Ottoman territory and, apparently, retook the copper-producing lands of Kastamonu.<sup>48</sup> This victory was in any case short-lived for in 1423<sup>49</sup> Murad II took Kastamonu and set the copper furnaces to work. The İsfendiyaçoğulları ruler was once more reduced to vassal status in the area of Sinop.<sup>50</sup>

Mehmed II continued to control the copper mines of the area, taking Sinop in 1461.<sup>51</sup> The most important of the products of the Sinop region was, according to Kritovoulos, copper.<sup>52</sup> During his reign the area of Kastamonu was a producer of 'infinite' amounts of copper, extracted from quarries and mines there.<sup>53</sup> Its importance as a source of copper in this period is indicated by its being sold in *appalto* to two people, one of whom controlled the export via the sea and the other that via the land route. A good reserve of copper was always kept in the treasury.<sup>54</sup>

<sup>43</sup> Imber, *Ottoman Empire*, p. 41 dates this to, probably, 1398. His conquest of Samsun appears in Neşri, at the same time as the conquest of Kastamonu and Osmanlık in 795/1392–3: Neşri, *Menzel, Cod.* p. 58; Neşri, *Kitab-ı Cihan-nüma*, p. 322.

<sup>44</sup> Imber, *Ottoman Empire*, p. 40. Neşri, *Cod. Menzel*, p. 77, dates the conquest of Amasya to 794/1391–2.

<sup>45</sup> Imber, *Ottoman Empire*, p. 63.

<sup>46</sup> Aşıkpaşazade, *Altosmanische Chronik*, pp. 79–80; Aşıkpaşazade, *Tevarih-i al-i 'Osman*, pp. 89–90; Neşri, *Menzel, Cod.* p. 145; Neşri, *Kitab-ı Cihan-nüma*, pp. 540–2.

<sup>47</sup> Colin Imber dates Mehmed I's campaign to, probably, the second half of 1417: *Ottoman Empire*, p. 88 and n. 23.

<sup>48</sup> Imber *Ottoman Empire*, pp. 95–6.

<sup>49</sup> Imber, *Ottoman Empire*, p. 95 gives this date, although Vryonis, 'Byzantine mines', 10 dates the Ottoman conquest of Kastamonu to 1425.

<sup>50</sup> Aşıkpaşazade, *Altosmanische Chronik*, pp. 92–3; Aşıkpaşazade, *Tevarih-i al-i 'Osman*, pp. 104–5; Neşri, *Menzel, Cod.* pp. 153–4; Neşri, *Kitab-ı Cihan-nüma*, pp. 574–6.

<sup>51</sup> Aşıkpaşazade, *Altosmanische Chronik*, pp. 147–9; Aşıkpaşazade, *Tevarih-i al-i 'Osman*, pp. 154–5; Neşri, *Menzel, Cod.* pp. 190–2; Neşri, *Kitab-ı Cihan-nüma*, pp. 740–6. Aşıkpaşazade specifies that the income from the copper furnaces allocated to the Ottoman ruler was to be used if required.

<sup>52</sup> Kritovoulos, *De Rebus per Annos 1451–1467 a Mechemet II Gestis*, ed. V. Grecu (Bucharest, 1963), p. 275; Kritovoulos, *History of Mehmed the Conqueror. By Kritovoulos*, trans. C. T. Riggs (Westport, Conn., 1954), p. 166.

<sup>53</sup> Franz Babinger, *Die Aufzeichnungen des Genuesen Iacopo de Promontorio-de Campis über den Osmanenstaat um 1475*, Bayerische Akademie der Wissenschaften, philosophisch-historische Klasse Sitzungsberichte, Jahrgang 1956–8 (Munich, 1957), p. 67.

<sup>54</sup> *Ibid.*: 'de quali rami ne tiene sempre una ampla torre piena loco thesauri'. Copper from this area was used to mint money.

Apart from the mines in north-east Anatolia, the Ottomans also came to control the metal resources of the Balkans. After the battle of Kosovo in 1389 for example, the mines of that region fell into Ottoman hands.<sup>55</sup>

The Turks therefore had at their disposal their own metal resources. These resources, particularly copper, were exported from Turchia westwards, a trade in which, according to Professor Balard, the Genoese played a dominant role.<sup>56</sup> Lead was exported westwards and appears on ships of western merchants as an export commodity.<sup>57</sup> In the inventory of the goods of Bartolomeo Vignoso, for example, items being sent west included 50 *kantars* of lead.<sup>58</sup> Thessaloniki, under the Ottomans, exported lead which went via Crete to Alexandria<sup>59</sup> as did lead exported from Constantinople.<sup>60</sup>

Anatolia was a producer and exporter of copper which the Italian merchants bought in large quantities.<sup>61</sup> In 1403 Petro Falacha planned to sail from Caffa to Turchia to load copper and other goods.<sup>62</sup> Merchants also went from Pera to Sinop for copper.<sup>63</sup> Turkish copper may have been exported to Barcelona. In 1381 a ship mastered by Martino Umcentii and Alnardo Belegerio, both of Barcelona, was to sail from Chios to Theologos and from there to Alexandria or Beirut before going to Barcelona. It could load, among other things, copper in these places. The document does not specify which of the ports copper was to be loaded in but it could well have been Theologos.<sup>64</sup> Copper was sold in Antalya and although Pegolotti does not specify where the copper came from, it may, in the light of the evidence of Turkish copper production, have been produced in Turchia.<sup>65</sup>

Turks themselves traded in copper with the Genoese, the İsfendiyoğulları, for example, selling Kastamonu copper to Genoese merchants. In 1390, Constantino de Groto, *burgensis* of Pera, brought a case for damages before the Genoese *podestà* in Pera, against Dagnano Spinulla and Petro de Groto, *burgenses* of Pera, *fideicommissors* of Raffaele Capello, also a *burgensis* of Pera. Constantino claimed that he and Raffaele Capello had made a *società* concerning 16,000 pounds of copper at the weight of Solimambasa

<sup>55</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 58; Aşıkpaşazade, *Tevarih-i al-i 'Osman*, p. 64.

<sup>56</sup> Balard, *Romanie génoise*, vol. II, p. 783.

<sup>57</sup> 1396.v.31 : Heers, 'Commercio', 173; 191 pieces of lead are listed on a ship arriving in Genoa from Romania.

<sup>58</sup> Balard, *Romanie génoise*, vol. II, p. 783.

<sup>59</sup> Piloti, *L'Egypte*, p. 63.

<sup>60</sup> 1437.ix.4 = Badoer, *Libro*, col. 62, p. 124, col. 95, p. 193. Lead was traded in Constantinople, 1437.viii.27 = *ibid.*, col. 50, p. 101, col. 95, p. 192.

<sup>61</sup> Ashtor, 'Pagamento', p. 370 and n. 3.

<sup>62</sup> 1403.xi.28 = ASG, San Giorgio, Sala 34 590/1307, fos. 40r–41r.

<sup>63</sup> Balard, *Romanie génoise*, vol. II, p. 784, n. 69 (1402).

<sup>64</sup> 1381.ii.15 = ASG, Notario, Antonius Feloni, C. 175, fos. 110v–111r; Balard, *Romanie génoise*, vol. II, p. 784 n. 72, in reference to this document, talks of Catalan merchants going to Chios to get copper for Alexandria. The document however makes it clear that the merchants, sailing from Chios, were to load copper in either Theologos or Beirut or Alexandria.

<sup>65</sup> Pegolotti, *Pratica*, p. 58.

Turchus, lord of Kastamonu (Süleyman Paşa, the İsfendiyarogullari ruler). This weight was the equivalent of c.4,000 *kantars* of Pera. Constantino bought the copper from Süleyman Paşa for 476,000 silver *aspers* of Kastamonu, a sum which Raffaele promised to settle with him. When, however, Constantino had requested settlement from Raffaele's agents, Dagnano and Petro, they had not paid it, thus resulting in a loss to Constantino.<sup>66</sup>

Turkish trading does not appear to have been restricted to regions of copper production, for Turkish merchants apparently traded the commodity further afield. In 1404 Cagi Mostaffa Turk of Bursa (Hacı Mustafa) acknowledged payment from the Jew Elias Sacerdotus for copper which he had handed over to Elias.<sup>67</sup> The Genoese document in which this was stated was enacted in Chios, which presumably indicates that this was where the copper had been delivered. Turkish merchants would therefore appear to have been trading copper in Chios in the early fifteenth century.

Much copper was sold in Constantinople<sup>68</sup> and was exported from there to Crete, Venice, Messina and Saragosa, Damascus, Beirut and Alexandria.<sup>69</sup>

<sup>66</sup> 1390.i.11 = ASG, Notario, Donato de Clavaro, C. 476, doc. 26. A summary of this document is given in Balard, Laiou and Otten-Froux, *Documents*, no. 82, p. 37.

<sup>67</sup> 1404.xii.31 = ASG, Notaio Gregorio Panissario, Sc. 37, filza 1, doc. 48; Toniolo, *Notai Genovesi*, doc. 52, p. 105. These two merchants were also involved in a transaction over mastic which Elias was to hand over to Mustafa: 1404.xii.31 = *ibid.*, doc. 49; Toniolo, *Notai Genovesi*, doc. 53, p. 106.

<sup>68</sup> Pegolotti, *Pratica*, pp. 35, 59; 1436.ii.17 = Badoer, *Libro*, col. 38, p. 76, col. 39, p. 79; 1436.xii.3 = *ibid.*, col. 38, p. 76, col. 38, p. 77; 1436.xii.3 = *ibid.*, col. 39, p. 78, col. 38, p. 77; 1436.xii.4 = *ibid.*, col. 39, p. 78, col. 40, p. 81; 1437.iii.15 = *ibid.*, col. 55, p. 110, col. 55, p. 111, col. 17, p. 35; 1437.vi.7 = *ibid.*, col. 55, p. 110, col. 40, p. 81; 1437.vi.12, 17 = *ibid.*, col. 55, p. 110, col. 36, p. 73; 1437.vii.5, 15, 27 = *ibid.*, col. 55, p. 110, col. 75, p. 153; 1437.vii.12 = *ibid.*, col. 55, p. 110, col. 29, p. 59; 1437.iii.15, iv.22 = *ibid.*, col. 56, p. 112, col. 55, p. 111; 1437.iii.15 = *ibid.*, col. 56, p. 112, col. 4, p. 9; 1437.vi.7, vii.6 = *ibid.*, col. 56, p. 112, col. 72, p. 147; 1437.vi.7 = *ibid.*, col. 72, p. 146, col. 55, p. 111, col. 17, p. 35; 1437.vii.4 = *ibid.*, col. 72, p. 146, col. 5, p. 11; 1437.vii.5 = *ibid.*, col. 72, p. 146, col. 74, p. 151; 1437.vi.29 = *ibid.*, col. 76, p. 154, col. 74, p. 151; 1437.vii.3 = *ibid.*, col. 81, p. 164, col. 47, p. 95; 1437.vii.4 = *ibid.*, col. 81, p. 164, col. 81, p. 165; 1437.viii.7, ix.7 = *ibid.*, col. 81, p. 164, col. 91, p. 185; 1437.vii.8 = *ibid.*, col. 83, p. 168, col. 55, p. 111; 1437.vii.8 = *ibid.*, col. 83, p. 168, col. 80, p. 163; 1437.viii.7 = *ibid.*, col. 91, p. 184, col. 45, p. 91; 1437.ix.26 = *ibid.*, col. 120, p. 242, col. 119, p. 241; 1437.x.31 = *ibid.*, col. 130, p. 262, col. 101, p. 205, col. 141, p. 284, col. 101, p. 205; 1437.xi.15 = *ibid.*, col. 130, p. 262, col. 141, p. 285; 1437.x.31 = *ibid.*, col. 141, p. 284, col. 101, p. 205, col. 137, p. 277, col. 121, p. 245, col. 100, p. 203; 1438.vii.8 = *ibid.*, col. 218, p. 438, col. 218, p. 439; 1438.vii.9 = *ibid.*, col. 218, p. 438, col. 120, p. 243; 1438.vii.18 = *ibid.*, col. 218, p. 438, col. 169, p. 341; 1438.viii.14 = *ibid.*, col. 227, p. 456, col. 35, p. 71; 1438.viii.14 = *ibid.*, col. 227, p. 456, col. 220, p. 443; 1438.xii.7 = *ibid.*, col. 291, p. 584, col. 291, p. 585; 1438.xii.5 = *ibid.*, col. 291, p. 584, col. 176, p. 355; 1439.vi.6 = *ibid.*, col. 331, p. 664, col. 133, p. 269; 1439.ix. = *ibid.*, col. 365, p. 732, col. 365, p. 733; 1439.ii.25 = *ibid.*, col. 401, p. 804, col. 401, p. 805; 1439.ii.26 = *ibid.*, col. 401, p. 804, col. 387, p. 777.

<sup>69</sup> 1436.xii.4 = Badoer, *Libro*, col. 39, p. 78, col. 40, p. 81 (Messina, Saragosa); 1437.iv.22 = *ibid.*, col. 55, p. 110, col. 55, p. 111 (Venice); 1437.xi.17 = *ibid.*, col. 142, p. 286, col. 143, p. 289, col. 137, p. 277, col. 121, p. 245, col. 100, p. 203 (Venice); 1437.xi.17 = *ibid.*, col. 117, p. 236, col. 142, p. 287; 1438.xii.7 = *ibid.*, col. 291, p. 584, col. 291, p. 585 (Beirut); 1437.iii.15, iv.22 = *ibid.*, col. 56, p. 112 and col. 55, p. 111 (Candia, Alexandria); 1437.vi.7, vii.6 = *ibid.*, col. 56, p. 112, col. 72, p. 147 (Candia, Alexandria); 1436.ii.22 = *ibid.*, col. 38, p. 76, col. 17, p. 35 (Messina); 1437.iv.22 = *ibid.*, col. 55, p. 110, col. 17, p. 35 (Alexandria); 1437.viii.2 = *ibid.*, col. 89, p. 180, col. 83, p. 169 (Candia).

While some of this copper came from the Balkans,<sup>70</sup> it seems highly possible that much of the copper on sale on the Constantinople market came from Anatolia.<sup>71</sup> Badoer refers to settling copper sales after the return of ships from the Black Sea, perhaps indicating that copper was being brought into Constantinople from the Kastamonu region.<sup>72</sup> Merchants did after all sail with cargoes of copper from Sinop to Pera.<sup>73</sup> The copper referred to by Piloti being sold 'en piatines' in Constantinople<sup>74</sup> may too well have originated in Anatolia, for Turchia was listed together with Tana, Caffa, Trabzon and Greece as the places from which the commodities listed by Piloti came.

In conclusion, it seems at least reasonable to suggest that the absence of references to a large volume of metal trading from the west into Turchia was due not to its illegality and gaps in extant data, but to the reality that there was no such volume. Anatolia did not necessarily need to import large quantities of metal, or at least not those it produced itself. In the case of the arms trade, perhaps weapons were not traded in concealed quantities but what was imported was technology and expertise. The cannons under Mehmed II that fired so effectively at the walls of Constantinople were cast by a Hungarian renegade.<sup>75</sup>

Precious metals too were traded in Anatolia. Silver and gold were traded as luxury items. These were, after all, items much sought after as tokens of wealth. At the end of the thirteenth century, the Byzantine general Philanthropenos sent silver and gold as part of the spoils of his fighting in Asia Minor back to Constantinople.<sup>76</sup> Around the same period, the *tekfür* of Bilecik (Greek Bekloma, east of Bursa, north-west of Eskişehir) sent, according to Neşri, whose reliability for this early period is a shaky, Köse Mihal to 'Osman to invite him to his wedding. Köse Mihal went bearing gifts of gold and silversmiths' tools.<sup>77</sup> In the 1330s, Mehmed Aydınoğlu, the ruler of Aydın, regarded silver as among those items suitable to give as presents to the traveller ibn Battuta.<sup>78</sup> He also gave silver pieces to ibn Battuta's companions on their departure.<sup>79</sup> There were gold and silver plates and spoons at the palace at Birgi.<sup>80</sup> Umur Aydınoğlu presented Şeyh

<sup>70</sup> 1438.vii.8 = Badoer, *Libro*, col. 218, p. 438, col. 120, p. 243, 'rame in tornexi vlachesci'.

<sup>71</sup> Both Thiriet, *Romanie vénitienne*, p. 427 and Balard, *Romanie génoise*, vol. II, p. 783, n. 68 say that Badoer dealt in copper from Kastamonu and refer to Badoer, *Libro*, col. 56. This reference, however, although dealing with copper, does not mention Kastamonu.

<sup>72</sup> 1439.vi.6 = Badoer, *Libro*, col. 331, p. 664 and col. 133, p. 269; 1437.iv.22 = *ibid.*, col. 55, p. 110, col. 55, p. 111.

<sup>73</sup> Balard, *Romanie génoise*, vol. II, p. 784, n. 69 (1402).

<sup>74</sup> Piloti, *L'Egypte*, pp. 62–3.

<sup>75</sup> Dukas, *Historia Byzantina*, pp. 247–8, Dukas, *Historia Turcobyzantina*, pp. 307, 309.

<sup>76</sup> Planoudes, *Epistolae*, letter 78, p. 99.

<sup>77</sup> Neşri, *Menzel*, *Cod.* p. 30; Neşri, *Kitab-ı Cihan-nüma*, p. 98.

<sup>78</sup> Ibn Battuta, *Voyages*, p. 302.

<sup>79</sup> Ibn Battuta, *Voyages*, p. 307. <sup>80</sup> Ibn Battuta, *Voyages*, p. 304.



‘Izz al-Dīn with silver vessels.<sup>81</sup> At the wedding in 783/1381–2 between Bayezid and the daughter of the emir of Germiyan there were gold and silver trays, silver ewers and pots, and gold coins.<sup>82</sup> Around the same period Aşıkpaşazade makes reference to silver and gold trays and bowls taken as spoil from a captured castle.<sup>83</sup> At the end of the fourteenth century, the Byzantine emperor sent 100 fish full of gold and silver to the Ottoman ruler Bayezid.<sup>84</sup> Even if this is more myth than reality, it still indicates the importance of gold and silver as tokens of wealth and power.

Gold was a commodity in the Turkish markets. Spun gold was sold in Antalya<sup>85</sup> and gold appeared too in the markets of Edirne. In 1438 3 *chanele* of gold thread was sold in Edirne, from the 10 *chanele* sent there. The figure entered is 9 *hyperpyra*, presumably the amount for which they were sold.<sup>86</sup> The remaining 7 *chanele* of gold thread were sent to Constantinople from Edirne by Pipo de Jachomo.<sup>87</sup> The 10 *chanele*, weighing 10 ounces of Constantinople, were sent by Asalon, son of Cain, a Jew, and were valued at 3 *hyperpyra* per ounce.<sup>88</sup> Spun gold of every region came to the markets of Pera and Constantinople where spun gold of Lucca, Genoa and Provence was sold.<sup>89</sup>

Silver too was traded in the markets of Turchia, selling in Antalya and in Theologos in pieces and bullion.<sup>90</sup> Silver items were also bought and sold. In 1358 Musa, emir of Menteşe, promised to pay the duca di Candia, Pietro Badoer, the remainder owed for silver/a silver object (‘argentei’) of the commune of Crete which Musa’s father had received from Francisco Blanco when he was in Balat on negotiations for the commune.<sup>91</sup> In 1381 there was a dispute in Chios between two merchants from Barcelona and the Barcelonese masters of a ship. One of the matters of dispute concerned nine bales of cloth and some silver.<sup>92</sup> As this ship was on its way to Theologos and as the item together with silver in dispute was cloth, something much traded into Theologos, it seems possible that the silver may have been destined for Theologos.

It is possible that some silver was traded into this region from Chios, for

<sup>81</sup> Ibn Battuta, *Voyages*, p. 311.

<sup>82</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 53; Aşıkpaşazade, *Tevarih-i al-i ‘Osman*, p. 57; Neşri, *Menzel, Cod.* p. 56; Neşri, *Kitab-ı Cihan-nüma*, p. 206.

<sup>83</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 55; Aşıkpaşazade, *Tevarih-i al-i ‘Osman*, p. 60.

<sup>84</sup> Aşıkpaşazade, *Altosmanische Chronik*, p. 61; Aşıkpaşazade, *Tevarih-i al-i ‘Osman*, pp. 67–8.

<sup>85</sup> Pegolotti, *Pratica*, p. 58.

<sup>86</sup> 1438.x.22 = Badoer, *Libro*, col. 230, p. 462, col. 89, p. 181.

<sup>87</sup> 1438.x.22 = Badoer, *Libro*, col. 113, p. 228, col. 89, p. 181.

<sup>88</sup> 1437.xii.17 = Badoer, *Libro*, col. 89, p. 180, col. 113, p. 115.

<sup>89</sup> Pegolotti, *Pratica*, p. 36.

<sup>90</sup> Pegolotti, *Pratica*, pp. 56, 58.

<sup>91</sup> 1358.x.13 = Zachariadou, *Trade and Crusade*, doc. 1358/1359M, clause 5, p. 218. The amount paid was 800 gold *florins* but this sum included a settlement for damages by Turks against Cretan subjects on the *grippa* of Leone Marmara.

<sup>92</sup> 1381.ii.15 = ASG, Notario, Antonius Feloni, C. 175, fos. 110v–111r.

no exemption was granted for silver or gold from the *gabella* of 0.5 per cent charged there on all merchandise carried by sea to Chios, Mitylene, Rhodes, Old and New Phokaea, Caffa and all places in Turchia.<sup>93</sup> Gold and silver could therefore have been imported into Anatolia from Chios, particularly as one of the other items specially mentioned as not being granted exemption was soap, an import into that region.

Apart from importing, Turchia also exported gold and silver. In 1377 Dutch gold (*aurepelium*) was imported from Balat into Genoa where it was taxed.<sup>94</sup>

There was thus a circular movement of metals round the eastern Mediterranean, flowing both into and out of Anatolia. Although it is generally assumed that the volume of metal traded into Turchia was larger than suggested by extant evidence, it seems possible at least to suggest that this was not in fact so and that lack of evidence in this case is due to there being a lack of anything to evidence. On the other hand, any conclusion must remain tentative as there is very little extant data from which one can gauge the extent of this trade or the details of its operation.

<sup>93</sup> 1408.ii, Argenti, *Chios*, vol. I, p. 422.

<sup>94</sup> 1377.viii.19 = Day, *Douanes*, vol. II, p. 874.