

## الملاحق

الملاحق أ: منتجات الإمبراطورية الرومانية  
يسرد هذا الجدول منتجات الإمبراطورية الرومانية وفقاً لفايلو الصيني

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Gold	Orpiment
Silver	Nephrite
Copper	Multicoloured jade or gemstone
Iron	Twelve sorts of wool rugs: yellow, white•black, green, purple, fiery red, deep red•dark blue, golden yellow, light blue, black•and yellow
Lead	Finely patterned multicoloured wool carpets
Tin	Nine colours of multicoloured lower quality wool carpets
Tortoises used for divination	Gold-threaded embroidery
White horses with red manes	Polychrome fine silk
Fighting cocks	Woven gold cloth
Rhinoceroses	Purple chi cloth
Sea turtle shell	Falu cloth
Black bears	Purple chiqu cloth
Product of red hornless dragons (cinnabar resin = 'dragons blood')	Asbestos fire-proof cloth
Mongoose	Fine silk gauze cloth
Large cowries	Shot silk
Mother-of-pearl	Dudai cloth
Carnelian	Cotton-wool cloth
'Southern gold'	Multicoloured tao cloth

Kingfisher feathers	Crimson curtains woven with gold
Ivory	Multicoloured 'spiral curtains'
Coloured veined jade	Yiwei
'Bright Moon' pearls	Myrrh
Large diamonds	Storax
Genuine white pearls	Diti
Yellow amber	Rosemary
Red coral	Incense resin
Ten varieties of glass: red, white, black, green, yellow, blue-green, dark blue, light blue, fiery red, and purple	Bai fuzi
A magnificent jade	Frankincense
White carnelian	Turmeric: saffron or tulips
Rock crystal or transparent glass	Rue oil
Various semi-precious gems	Oriental lovage
Realgar	

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### الملحق ب: الواردات الشرقية إلى الإمبراطورية الرومانية

يسرد هذا الجدول المنتجات الشرقية الخاضعة للضريبة الجمركية على الواردات إلى الإسكندرية.<sup>(١)</sup>

Cinnamon	Linen
Long pepper	All sorts of gems
White pepper	Pearls
Pentasphaerum leaf	Sardonyx
Barbary leaf	Ceraunium (bloodstone)
Costum	Hyacinth stone (blue gems)
Costamomum	Emerald
Nard	Diamond
Tyrian cassia	Sapphire
Cassia-wood	Turquoise
Myrrh	Beryl
Amomum	Tortoise stone
Ginger	Indian or Seric drugs
Malabrathrum	Raw silk
Indian spice	Silk or part-silk clothing
Galbanum	Dyed cloth
Asafoetida	Embroidered fine linen
Aloe	Silk thread
Lycium	Indian eunuchs
Perian gum	Lions
Arabian onyx	Lionesses
Cardamom	Pards (maneless big cats)

Cinnamon-wood

Leopards

Cotton goods

Panthers

Babylonian hides

Purple dye

Parthian

hides Wool

Ivory

Dye

Indian iron

Indian hair

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## الملاحق ج: أسعار السلع الشرقية

يسرد هذا الجدول أسعار السلع الشرقية في الأسواق الرومانية طبقاً لبليي (١ دينار يوس يساوي ٤ سيسترس).<sup>(١)</sup>

السلع الأساسية	الأسعار بالديناري لكل رطل روماني (١٢ أوقية)
Frankincense (best variety)	١٠-٦
Frankincense (second grade)	٥
Frankincense (third grade)	٣
Myrrh (Stacte variety)	٥٠-٣
Myrrh (Somali variety)	١٦-٥
Myrrh (Erythraean variety)	١٦
Myrrh (perfume variety)	١٢
Myrrh (cultivated variety)	١١
Pepper, long	١٥
Pepper, white	٧
Pepper, black (common pepper)	٤
Nard	١٠٠
Nard leaf (three varieties)	٧٥-٤٠
Nard (Ganges variety)	٣
Cinnamon	<sup>(٢)</sup> ١٥٠٠
Cinnamon (Daphnis variety)	٣٠٠
Cinnamon wood	١٠
Amomum	٦٠-٤٨
Costus	٥-٥
Caredamon	١٢
Ammoniacum	٢

الأسعار بالديناري لكل رطل روماني (١٢) أوقية)	السلع الأساسية
١٧	Styrax
١	Sweet Flag
٥	Sweet Rush
٣	Bdellium
٣	Cardamom (best variety)
٥٠-٥	Cassia
٦	Ginger
٢-٥	Ladanum

## الهوامش

### هوامش الفصل الأول: الأدلة القديمة على الاتصالات الشرقية

1 Herodotus, 3.89–96.

2 Pliny, Natural History, 6.21.

3 Pliny, N.H. 6.26.

4 Suetonius, Julius Caesar, 25.

5 Strabo, Geography, 16.23.

6 Seneca, Natural Questions, preface 1.11.

7 Seneca's book 'De Situ Indiae'. See Pliny, N.H. 6.21; Servius, Commentary on Virgil, 1.9.30.

8 Seneca, N.Q. 5.18.11.

9 Chi I, Hsin Shu, 4.41.

10 Huan Kuan, Yan Tie Lun (Discourses on Salt and Iron), 2.14.

11 Tacitus, Annals, 3.53.

12 Seneca, De Beneficiis, 7.9.

13 Pliny, N.H. 12.41.

- 14 Mela: "Hipparchus suggests Sri Lanka may be the first part of another world. Hipparchus is probably right because the landmass is inhabited yet no one is reported to have sailed around it." Mela, 3.70.
- 15 Seneca, N.Q. 5.18.4.
- 16 On Ireland: 'The approaches to its harbours are well known to us through trade and the activities of our entrepreneurs'. Tacitus, Agricola, 24.
- 17 See De Romanis, (1997) 17; 37.
- 18 The original Chinese name for the Far West was Li-jian. Weilue: 'The kingdom of Da Qin (Rome) is also called Li-jian.' (Weilue, 11). Li-jian is possibly an abbreviation of 'Alexander', 'A-li-jian-der'. The Chinese name would mean 'the land of Alexander' i.e. the 'classical world'. Discussed: Pulleyblank, (1999) 74; 76.
- 19 See Leslie & Gardiner, (1996) 4.
- 20 See Casson, (1989) 10.
- 21 See Cimino, (1994) 8-9.
- 22 Ball, (2000) 123; Casson, (1989) 7-8.
- 23 De Romanis, (1997) 14-5; Casson, (1984) 211.
- 24 See Robin, (1997) 42; Cimino, (1994) 8.
- 25 CIS. 2.161. See Young (2001) 6; De Romanis, (1997) 15; Casson, (1989) 7.
- 26 'Panjtar Inscription'. See Robin, (1997) 44; Cribb, (1992) 133; (1998) 177.
- 27 Manbanos = Nahapana. Based on phonic resemblance, distribution of inscriptions and coin finds in the Gujarat region. See Casson, (1989) 197-8.
- 28 Periplus Maris Erythraei = P.M.E. Nahapana is mentioned P.M.E. 41. See also 52.

- 29 Identifying the Saka era with the reign of Gondophares (beginning c. AD 20). See Cribb, (1998) 172–3; 177.
- 30 Pliny, N.H. 6.84–5.
- 31 See Ball, (2000) 126; Casson, (1991b) 8–11; Miller, (1969) 16–20; Warmington, (1928) 43; Wheeler, (1954) 141–52.
- 32 Dueck, (2000) 75; 180–6; Clarke, (1997) 193; 203.
- 33 Dueck, (2000) 69–75.
- 34 Strabo, Geog. 12.3.15; 12.3.39. Dueck, (2000) 1–2; Clarke, (1997) 92–110.
- 35 Dueck, (2000) 4; 7–8.
- 36 Strabo, Geog. 2.5.11–12. See Dueck, (2000) 8; 21; 85; 87; 101.
- 37 Ibid. 2–3; 85.
- 38 Ibid. 53; 87; 96. Strabo's ideas on the study of geography: see Dueck, (2000) 163–4; 168.
- 39 See Ibid. 136; 144; 156.
- 40 For instance: Strabo, Geog. 15.1.57.
- 41 Strabo, Geog. 15.1.4.
- 42 Pliny: 'tales invented for the purpose of enhancing the prices of these commodities' ('winged serpents' said to guard cinnamon groves). See Pliny, Natural History, 12.42.
- 43 See Strabo's account of whales chasing Roman ships sailing to India (they had to be scared away with trumpets). Strabo, Geog. 15.2.13.
- 44 Strabo, Geog. 15.1.4–5.
- 45 Exact measurements: 0.37 by 6.75 metres. See Cimino, (1994) 10.

- 46 Peutinger Map, segment 11. See Ball, (2000) 123.
- 47 See Talbert, (2004) 126–8.
- 48 Discussed: Young, (2001) 22; 187; 198; Millar, (1998) 120–1.
- 49 See Young, (2001) 140–1; 147; Ball, (2000) 133.
- 50 Discussed: Millar, (1998) 120.
- 51 Ibid.
- 52 Isidore, 1.4. See Mattern, (1999) 34.
- 53 Pliny, N.H. 6.31 (events 1 BC).
- 54 Dionysius as Isidore see Mattern, (1999) 34.
- 55 Latest dateable details are 26 BC. See Ibid. 34–5.
- 56 Pliny's life: see Healy, (1999) 1; Beagon, (1992) 2. Ancient sources: three letters of his nephew Pliny the Younger (3.5; 6.16; 6.20), a summary biography attributed to Suetonius, what can be inferred from brief remarks in the N.H. See Murphy, (2004) 2.
- 57 Career: see Healy, (1999) 1–22, esp. 4–7; Beagon, (1992) 1–10.
- 58 Pliny possibly served in Africa or Gaul. See Pliny, N.H., 25.76; 35.48; 18.51 (Africa); 3.5 (Gaul). Pliny, Letters, 3.5. Discussed: Healy, (1999) 6–9.
- 59 Pliny, Letters, 3.5. Suetonius, Vespasian, 21. Discussion of duties see Healy, (1999) 7; 32.
- 60 See Pliny, Letters, 6.16. See Healy, (1999) 8; Beagon, (1992) 6.
- 61 Healy, (1999) 33; Murphy, (2004) 3.

- 62 Pliny also wrote a thirty-book history of Rome, completed a six-volume work on the education of an orator and an eight-volume grammatical treatise. Pliny, Letters, 3.5. See Beagon, (1992) 3.
- 63 Discussed: Murphy, (2004) 5–6; 10; Beagon, (1992) 24.
- 64 Murphy: 'it owes its shape more to whimsical gigantism than designing intelligence'. See Murphy, (2004) 30; 34.
- 65 See Healy, (1999) 39–41; 63–70.
- 66 'Scientific method': see Isager, (1991) 43. 'Critical method': Murphy, (2004) 5; 33. Moral codes: Healy, (1999) 3; 29; Beagon, (1992) 14.
- 67 Pliny: 'According to Arab envoys and our own traders who have come from the place'. Pliny, N.H. 6.31. Military expedition to Ethiopia: Pliny, N.H. 6.35. Dionysius of Charax: Pliny, N.H., 6.31.
- 68 Discussed: Murphy, (2004) 5.
- 69 Pliny, N.H. Preface.
- 70 Discussed: Murphy, (2004) 34; Healy, (1999) 62; 109; Beagon, (1992) 24.
- 71 Berggren & Jones, (2000) 3.
- 72 Ibid. 26–7.
- 73 Bagnall, (2000) 3; Adams, (2007) 226.
- 74 Significance discussed: Bagnall, (2000) 9–10, 15–6; Adams, (2007) 227.
- 75 Bagnall, (2000) BE 38.
- 76 Discussed: Bagnall, (2000) 16.
- 77 Discussed: Adams, (2007) 227.
- 78 Details see Fuks, (1951) 207–16; Sidebottom, (1989) 83–92; Young, (2001) 64–5.

79 See Adams, (2007) 222–5 (O. Petr. 245).

80 See Fuks, (1951) 209.

81 Coptos Tariff : OGIS 674. Discussed: Adams, (2007) 132–3; Sidebotham, (2008) 187.

82 Discussed: Sidebotham, (2008) 192.

83 P. Vindob. G 40822 = SB 8.13167. Discussed: Adams, (2007) 229.

84 See Millar, (1998) 133.

85 Discussed: Franck & Brownstone, (1986) 140.

86 See Young, (2001) 139; 168; Gawlikowski, (1994) 32–3.

87 Discussed: Millar, (1998) 131. Inscriptions listed in Gawlikowski, (1994) 27–33.

88 CIS 2.3.3913. Discussed: Elton, (1996) 94; Millar, (1998) 171.

89 Details: Turner, (1989) esp. 5–16.

90 See Ball, (2000) 127; 132; Whittaker, (2004) 164.

91 Discussed: Tomber, (2008) 120.

92 See Thapar, (2002) 266–7.

93 Ibid. 260.

94 Discussion: De Romanis, (1997) 16–7. Sceptical: Ball, (2000) 126–7.

95 See Ball, (2001) 126.

96 See Zvelebil, (1992) 12.

97 See Champakalakshmi, (1996) 175–7.

98 Discussed: Strauss, (2007) 253.

99 Parker, (1992) 1077.

100 Considered in Strauss, (2007) 253.

101 Near modern Pattanam. See Tomber, (2008) 140–3.

102 Discussed: Rajan, (1996) 100; Champakalakshmi, (1996) 117; 127.

103 Investigation of site: Tomber, (2008) 138.

104 See Waugh, (2004) 1.

105 Ibid. 1–3.

106 Hou Hanshu, 88. Discussed: Leslie & Gardiner, (1996) xviii.

107 Discussed: Ibid. 22.

108 King Meredates was ruling in Mesene and the territory around Dura-Europos was still under Parthian control. Discussed: Leslie & Gardiner, (1996) 4; 7–10; 20–2. Hill, Weilue: About the text (2004).

### هوامش الفصل الثاني: مصر الرومانية والطرق البحرية إلى الهند

1 Discussed: Sidebotham, (2008) 152–6.

2 Darius, Suez Inscription.

3 Herodotus, 4.44. Discussed: Ray, (1994) 52.

4 Nearchus: Arrian, Campaigns of Alexander, 8.20–33; Strabo, Geography. 15.2.14; 16.3.2; Pliny, Natural History, 6.26.96–100.

5 See Strabo, Geog. 15.2.9.

6 An inscription from the Nile Delta known as the ‘Pithom Stele’ documents these initiatives. Discussed: Sidebotham, (1989) 486; (2008) 164; Tomber, (2008) 64.

- 7 Ptolemaic findings discussed: Sidebotham, (2008) 162–4.
- 8 Ivory: IG 11.2.163,aa7 (279 BC); 203.a71 (269 BC); 287.a118 (250 BC).  
Discussed: Sidebotham, (2008) 162–4.
- 9 SB 3.7169 (c.200–150 BC). See Adams, (2007) 233.
- 10 Details: Whittaker, (2004) 163.
- 11 Discussed: Tchernia, (1997) 260.
- 12 Agatharchides, 5.105. See also Diodorus Siculus, 3.47.
- 13 Strabo, Geog. 2.3.4–5.
- 14 Strabo, Geog. 2.3.4. Discussed: Singer, (2007) 18; Tchernia, (1997) 259.
- 15 Strabo, Geog. 2.3.4.
- 16 Periplus Maris Erythraei, 26.
- 17 Strabo, Geog. 17.1.13.
- 18 Strabo, Geog. 2.5.12. Discussed: Sidebotham, (1986a) 49.
- 19 Bernand, (1972) no. 72. Details: Sidebottom, (1986a) 2; Ray (1994) 57.
- 20 Dio Cassius, 51.7; Plutarch, Antony, 69.
- 21 Suetonius, Julius Caesar, 52; Augustus, 17.
- 22 Plutarch, Antony, 81.
- 23 Strabo, Geog. 17.1.12–13. Evidence considered: Adams, (2007) 166.
- 24 Josephus, Jewish War, 2.16.14. Discussed: Rickman, (1980); Adams, (2007) 159–160.

- 25 Resources and infrastructure in the Eastern Desert: see Sidebotham, (2008) 61–94 (stone quarries); 213–26 (gold mining); 277–302 (gemstone mines).
- 26 See Sidebotham, (1986a) 62–3; (1988) 493.
- 27 Sidebotham, (1996a) 292; Adams, (2007) 22.
- 28 Discussed: Adams, (2007) esp. 197.
- 29 Hydreumata and desert travel see Sidebotham, (1986a) 63; Adams, (2007) 24; 38; 45; 52–3.
- 30 Strabo, Geog. 17.1.45.
- 31 Discussed: Sidebotham, (1986a) 59; 64; (1988) 492.
- 32 Strabo, Geog. 16.4.23.
- 33 Strabo, Geog. 2.5.12.
- 34 Strabo, Geog. 17.1.13. Discussed: De Romanis, (1997) 84; Raschke, (1978) 662; Whittaker, (2004) 164; 168; Sidebotham, (2008) 177.
- 35 Strabo, Geog. 17.1.13. See Sidebotham, (1986a) 49.
- 36 Paulus Orosius: ‘Augustus conquered Alexandria, by far the richest and greatest of all cities. It’s riches so enhanced Rome’s wealth that the abundance of money raised the value of property and other saleable goods to double what they had been up to this time.’ Paulus Orosius, 6.19.
- 37 Suetonius: ‘Augustus brought the treasures of the Ptolemies to Rome for his Alexandrian triumph. So much cash passed into private hands that the interest rate on loans dropped sharply, while real estate values soured.’ Suetonius, Augustus, 41.
- 38 Dio Cassius: ‘Augustus gave gifts to the soldiers and distributed 400 sesterces to the Roman citizens . . . So vast an amount of money circulated through all parts of Rome that the price of goods rose and loans for which the borrower had

been glad to pay 12 per cent could now be had for one third that rate.’ Dio Cassius, 51.21. Discussed: De Romanis (1997) 83–4.

39 See Sidebotham, (1989) 486; (1996) 289.

40 See Whittaker, (2004) 163.

41 Modern estimates suggest that it cost less than 400,000 sesterces to construct a large Roman freighter (400 tons). See Hopkins, (1983) 92–4. The Muziris Papyrus records that a single Eastern cargo was worth almost 9 million sesterces (before tax). P. Vindob. G 40822, verso, 29.

42 Pliny: ‘Pearls came into common use at Rome after the reduction of Alexandria under our sway’. (Pliny, N.H. 9.59). Tacitus: ‘Extravagant consumption of edible luxuries reached fantastic heights in the century between the close of the Actian war and the struggle which placed Servius Galba on the throne.’ (Tacitus, Annals, 3.55). Discussed: De Romanis, (1997) 82–3; Tchernia, (1997) 261.

43 Strabo, Geog. 15.1.4. Discussed: De Romanis, (1997) 84.

44 Strabo, Geog. 17.1.45; Pliny, N.H. 6.26.102–3. Discussed: Sidebotham, (1986a) 81–2.

45 OGIS 674.

46 Myos Hormos: Strabo, Geog. 2.5.12. Berenice: 16.4.5; 16.4.24; 17.1.45; Pliny, N.H. 6.26.102–3. Discussed: Sidebottom, (1986a) 49–53. Adams, (2007) 35–6.

47 Strabo, Geog. 17.1.45. Average travel in the Eastern Desert was 30 km per day. See Adams, (2007) 45.

48 Pliny, N.H. 6.26.102. Discussed: Sidebotham, (2008) 159; De Romanis, (1997) 166.

49 See Adams, (2007) 83; 207; 223.

50 Details: Ibid. 225.

- 51 Syriac Acts of Thomas, 1–3. Tradition discussed in Thorley, (1979) 188.
- 52 For instance: ‘The bowl of the lamp was held in the hands of the statue of beautiful workmanship that had been made by the Yavanas.’ Manimekalai, 19.1.45. Discussed: Ray, (1995) 79.
- 53 Gallus left with 130 transport ships but many were wrecked. Strabo, Geog. 16.4.23–24. See Tomber, (2008) 57.
- 54 Discussed: Sidebotham, (1986a) 49; (1988) 488; (2008) 170.
- 55 Strabo, Geog. 16.4.5.
- 56 See Sidebotham, (1986a) 52.
- 57 Strabo, Geog. 7.1.45.
- 58 Ibid.
- 59 Details: Whitewright, (2007) 85–7. Discussed: Tomber, (2008) 63.
- 60 See Sidebotham, (1986a) 52–3.
- 61 Ibid. 54; 81.
- 62 Details: Adams, (2007) 226.
- 63 For instance: wine 48 vessels (BE 39); 1 jar sweet Rodian wine and beets (BE 87); onions (BE 78). See Bagnall, (2000) 15.
- 64 Pharmakoi: O. Petr. 275, 283.
- 65 Quince (BE 4). Discussed: Bagnall, (2000) 22.
- 66 Pliny, N.H. 6.26.102–4. Details: Sidebotham, (1986a) 60–1.
- 67 Details: Adams, (2007) 210; 213.
- 68 Discussed: Fuks, (1951) 214; Sidebottom, (1986a) 49–51; Casson, (1989) 13.

69 Fuks, (1951) 211.

70 P.M.E. 1.

71 Details: Sidebotham, (2008) 170; Tomber, (2008) 57–8; 60.

72 Blue, (2002) 38.

73 Details: Tomber, (2008) 60.

74 Discussed: Sidebotham, (1986a) 55–6; (1988) 490; Peacock & Blue, (2006) 5–6; Tomber, (2008) 59.

75 Details: Blue, (2002) 9.

76 See Sidebotham, (2002) 233; Tomber (2008) 62.

77 Sidebotham, (2008) 192.

78 Ibid. 165; 174.

79 Ptolemy, Geog. 4.5. Previous history of canal: Pliny, N.H. 6.33. Discussed: Young, (2001) 75–8.

80 Lucian, Alexander the False Prophet, 44.

81 Discussed: Sidebotham, (1989) 487; Sidebotham, (1996a) 290. Sceptical: Adams, (2007) 35.

82 Details: Sidebotham, (1989) 487.

83 Attested by P. Vindob. G 40822, recto, 1–15 (Second century AD).

84 See Fuks, (1951) 209–10.

85 Details: Ibid. 211.

86 IGRR 1.1172. Details: Fuks, (1951) 211. Discussed: Sidebotham, (1986a) 84.

- 87 P. Lond. 2.260.1.42. Discussed: Ray, (1994) 64; Adams, (2007) 233.
- 88 IGRR 1.1172. Details: Sidebotham, (1986a) 99. Discussed: 84; 88–9. See also O.Petr. No. 287.
- 89 For instance: Tiberius Claudius Agathocles (O. Petr. Nos. 275, 276), Gaius Julius Bacchylus (O. Petr. Nos 228; 291), and Gaius Norbanus (O. Petr. Nos. 244, 257). Roman citizens who may have owned firms: Popilius Mamilius Andromachus (O. Petr. No. 271), Tiberius Claudius Castor (O. Petr. No. 275), Claudius Demetrius (O. Petr. No. 275) and Tiberius Claudius Theodoros (O. Petr. No. 276). Discussed: Sidebotham, (1986a) 85–6.
- 90 See Bagnall, (2000) 26–7 (further ostraca to be published).
- 91 Anduros: BE 52–3. Discussed: Sidebotham, (1986a) 66–7; 86; (2008) 186; 192 (Eros).
- 92 Italian wine trade discussed: Bagnall, (2000) 20; Tomber, (2008) 59.
- 93 For instance: L. Titus Primus, L. Piso and Ti. Cl. Serenus. Details: Sidebotham, (1986a) 86;89.
- 94 For instance: O. Petr. Nos. 244, 257. Discussed: Sidebotham, (1986a) 84.
- 95 Bagnall, (2000) BE 71.
- 96 SB 7539.
- 97 Discussed: Sidebotham, (1986a) 86–8.
- 98 Himyaritic from the Homerite kingdom. Details: Sidebotham, (1986a) 86–8 (1989) sherds: 490; graffi ti: 497.
- 99 RES 2771; 3022. Details: Sidebotham, (1986a) 99–100.
- 100 Dio Chrysostom, 32.40. Discussed: Sidebotham, (1989) 497–8.
- 101 Sidebotham, (2008) 181.

- 102 Details: Sidebotham, (2008) 195.
- 103 Bernand, (1972) no. 38. See Sidebotham, (1986a) 100–1.
- 104 Discussed: Ray, (1994) 66.
- 105 Details: Sidebotham, (1989) 490; 497. Discussed: Champakalakshmi, (1996) 117; Rajan, (1996) 97.
- 106 Philostratus, Life of Apollonius of Tyana, 3.35.
- 107 Freighters of 500 tons: see Casson, (1991) 10; Whittaker, (2004) 178 fn. 53. Quseir ship wreck (33 metres long) suggesting a cargo capacity exceeding 300 tons (ships in this era were ‘smaller vessels’, see P.M.E. 57). English ships trading with India in the 18th century had an average size of 440 tons burden. Roman ship size and cargo capacity in the Mediterranean see Hopkins, (1983) 98–9.
- 108 See Blue, (2002) 27.
- 109 Discussion: Casson, (1991) 10.
- 110 See Cappers, (1989) 59; Blue, (2002) 81; Sidebotham, (2008) 181–2.
- 111 See P.M.E. 36. Copper alloy nails were used in shipbuilding.
- 112 OGIS 674.
- 113 Details: Blue, (2002) 9; 38; 82.
- 114 See Sidebotham, (2008) 165.
- 115 Philostratus, Life of Apollonius of Tyana, 3.35. The ‘bolts’ are mortise-and-tenon joints.
- 116 Mediterranean merchant ships see Casson, (1971) 157–68.
- 117 Small craft used to escape a sinking grain freighter: see New Testament, Acts, 27. An Italian freighter sends out a small craft to rescue the Roman general Pompey: see Plutarch, Pompey, 73.

- 118 Discussed: Ray, (1995) 79.
- 119 Perumpanarruppatai, 316–18.
- 120 Lucian, *The Ship*. 5.
- 121 For instance: Manimekalai, 19.1.45 (Yavana built pavilion: 19.1.108).
- 122 Discussed: Casson, (1991) 10.
- 123 Details: Sidebotham, (2008) 195.
- 124 Brailing rings range from 37 to 88 millimetres (diameter). Details: Blue, (2002) 8; 78; 81. Coils of thick rope recovered near the ancient shore used to secure ocean-going merchant ships. See Whitcomb (1982): 37–42.
- 125 Identification issues discussed: Tomber, (2008) 73.
- 126 P. Vindob. G 40822, verso, 28.
- 127 Details: Sidebotham, (2008) 195.
- 128 Details and discussion: Adams, (2007) 41.
- 129 Philostratus, *Life of Apollonius of Tyana*, 3.35.
- 130 OGIS 674.
- 131 Strabo, *Geog.* 2.3.4.
- 132 Theories: Young, (2001) 55–8.
- 133 Philostratus, *Life of Apollonius of Tyana*, Books 2–3.
- 134 Lucian, *Alexander the False Prophet*, 44.
- 135 Thebes in Egypt. Palladius, *On the Races of India and the Brahmans*, 1.3–10. Discussed: Weerakkody, (1997) 165.

- 136 See P.M.E. 20.
- 137 Philostratus, *Life of Apollonius of Tyana*, 3.35.
- 138 Pliny, N.H. 6.26.101. Discussed: Sidebotham, (1989) 492.
- 139 P. Vindob. G 40822, verso, 29 (after quarter tax).
- 140 Plus auxiliary support (1st century AD). See Duncan-Jones, (1994) 34.
- 141 See P.M.E. 39. Details of sailing timetables and seasonal conditions: Casson, (1991) 8.
- 142 Pliny, N.H. 6.26.104.
- 143 The *Periplus* explains: 'in the past, smaller vessels sailed along the coast from Qana and Aden [to India] following the coastal route'. P.M.E. 57.
- 144 Discussed: Tchernia, (1997) 257.
- 145 See P.M.E. 57. Discussed: Tchernia, (1997) 252–3.
- 146 Profit motives see De Romanis, (1997) 85; 88.
- 147 Pliny, N.H. 6.26.101. Discussed: Tchernia, (1997) 251.
- 148 Pliny's information on the voyage to India dated to the period between AD 49–52 (based on details given about the Roman and Egyptian calendars). See Tchernia, (1997) 252.
- 149 See P.M.E. 57. Discussed: Tchernia, (1997) 252–3.
- 150 About three weeks visiting markets around the Gulf of Aden, then a two week ocean crossing to India. Pliny, N.H. 6.26.104. Discussed: Tchernia, (1997) 251.
- 151 Speed and journey time discussed: Casson, (1980), 32–3.
- 152 Wind velocity over open waters averaging 22–33 knots with gusts frequently rising to gale force 34–47 knots. Details: Casson, (1991) 9.

153 Details: *Ibid.* 10.

154 See P.M.E. 39.

155 See Casson, (1991) 9.

156 See P.M.E. 38.

157 Pliny, N.H. 32.11.

158 Buddhahatta, *Ratnapariksa*, 250–2 (date uncertain). Discussed: De Romanis, (1997) 190;229.

159 Details: Tomber, (2008) 117–51.

160 See P.M.E. 39.

161 See Hou Hanshu, 88.15.

162 Archaeologists excavating the ancient Kushan palace at Begram in Afghanistan found classical bronzes and Roman glassware, including bowls, goblets and brightly painted vases (exported around AD 100). Vases were decorated with colourful episodes from Greek myth and showed scenes from the Empire, including gladiatorial combat and a view of the Pharos lighthouse at Alexandria. Details: Tomber, (2008) 123–4. Discussed: Ray, (1994) 77; Thapar, (2002) 238.

163 See P.M.E. 41.

164 See P.M.E. 40.

165 See P.M.E. 40.

166 See P.M.E. 43.

167 See P.M.E. 48.

- 168 Paithana: 20 days distant, Ter: a further 10 days distant (P.M.E. 51). Indian texts mention caravans carrying 500 carts of merchandise (Apannaka-Jataka, 1). Discussed: Prasad, (1984) 127.
- 169 See P.M.E. 36; 51; 54. Discussed: Tomber, (2008) 125; Thapar, (2002) 236.
- 170 See P.M.E. 41.
- 171 See P.M.E. 41.
- 172 See P.M.E. 49.
- 173 Lucian, Nigrinus, 5. Influenced by Dionysus and Bacchus myth-traditions, but more than barbarian topos. Discussed: Dalby, (2000) 192–3.
- 174 See Strauss, (2007) 253.
- 175 Realgar is arsenic sulphide.
- 176 Indian texts suggest that perfume manufacture was an important industry. Discussed: Prasad, (1984) 120; 128.
- 177 See P.M.E. 49. Discussed: (1989) 157–8. Significance: Macdowell, (1990) 61.
- 178 Indo-Greek legacy is another factor. Discussed: Varadpande, (1987) 129. Early Jain religious texts confirm that Indian courts had foreign female attendants. Stage directions: Yavani attendant: 'Enters with a bow in her hand' (Kalidasa, Vikramorvasiyam, 5). Discussed: Gupta, (1997) 8.
- 179 Details: Cappers, (1989) 56.
- 180 Periplus: 'All over India there are these rivers that have extreme ebb and flood tides. These tides come in at the time of the new and the full moon and they can last up to three days. At Barygaza they are more extreme than anywhere else.' See P.M.E. 45.
- 181 See P.M.E. 45. The author of the Periplus may have witnessed a tsunami style event.

182 See P.M.E. 45.

183 See P.M.E. 46.

184 See P.M.E. 50.

185 The cache contained a statuette of Poseidon (Third century BC). Details: Tomber, (2008) 130–3.

186 Discussed: Ray, (1994) 72–3. (1995) 93.

187 Periplus: ‘Kalliena was a port of trade where everything went. [But no longer] because now Sandanes has occupied it there is great hindrance [to trade]’. See P.M.E. 52. Discussed: Casson, (1989) 215.

188 Cribb, (1998) 177.

189 See P.M.E. 50–1.

190 Date: 1st–2nd century AD. Details: Thapar, (1997) 34–5; (2002) 260.

191 Discussed: Ibid.

192 See Thapar, (2002) 243.

193 Interpretation: Ball, (2000) 126 (interpretation problematic).

194 Significance: Thapar, (1997) 34–5; Ray, (1995) 80.

195 Nasik Cave 17. Hall with a votive stupa and stone cisterns (dated after AD 110). Details: Ibid.

196 Discussed: Tomber, (2008) 132. A Yavana ‘doctor’: see Ray, (1995) 80.

197 Discussed: Ball, (2000) 401.

198 See P.M.E. 51.

199 Pliny, N.H. 6.21.

- 200 See Purananuru, 17.9–13. Akananuru, 10.8–13 (fi shing community at Tyndis). Discussed: De Romanis, (1997) 92.
- 201 Pirates: P.M.E. 53; Pliny, N.H. 6.26.104; Ptolemy, Geography. 7.1; Discussed: Casson, (1989) 217. The Peutinger Table displays the words 'PIRATE' in bold red letters near the southern part of India. See Peutinger Map, Segment 11.
- 202 See P.M.E. 55.
- 203 See P.M.E. 54.
- 204 See P.M.E. 54; Pliny, N.H. 6.26.104–5.
- 205 See Akananuru, 149.7–11. Discussed: De Romanis, (1997) 98.
- 206 Purananuru, 343.1–10. Discussed: De Romanis, (1997) 95; 136–7; Gupta, (1997) 5.
- 207 Peutinger Map, Segment 11.
- 208 An Augustan Temple in Parthian Mesopotamia (founded c. AD 150). See Palmyrene inscription: CIS 2.3917. Discussed: Young, (2001) 144.
- 209 Eusebius, Church History, 5.10.
- 210 Periplus: 'Grain in sufficient amount for those involved with shipping, because the [local] merchants do not use it.' P.M.E. 56. Discussed: Casson, (1989) 85; 221.
- 211 Pliny, N.H. 6.26.104–5.
- 212 Akananuru, 57.14–17. Discussed: De Romanis, (1997) 108.
- 213 See Akananuru, 149.7–13.
- 214 Maturaikkanci, 75–88 (large ships at Nelcynda bringing gold) See De Romanis, (1997) 107–8; 144.
- 215 See P.M.E. 56.

216 See P.M.E. 56.

217 See De Romanis, (1997) 98; 139.

218 See P.M.E. 56.

219 Pliny, N.H. 34.48.

220 Periplus: 'wine – limited quantities, as much as goes to Barygaza'. (Perhaps only 'limited' compared to other exports). See P.M.E. 56.

221 Italian wine vessels in Coan style containers. Details: Will, (1991), (1996), (2004) 435; 438. Discussed: Rauh, (2003) 98; Whittaker, (2004) 164 n.17.

222 Rauh, (2003) 99.

223 Persius, Satires, 5.53–5 (mid 1st century AD).

224 Purananuru, 56.18–21. See Begley, (1996) 23.

225 Details: Williams, (2004) 438; 441; 449–50.

226 Periplus: 'Ships in these ports of trade carry full loads because of the volume and quantity of pepper and malabathron.' P.M.E. 56.

227 Details: De Romanis, (1997) 100; Gupta, (1991) 128.

228 Details: Casson, (1989) 222.

229 See P.M.E. 56.

230 Details: Rajan, (1996) 103; Rajan, (1996) 103. The best beryls had the greenness of pure seawater. See Pliny, N.H. 37.20.

231 See Casson, (1989) 223.

232 See P.M.E. 56.

233 See Maturaikkanci, 75–88.

- 234 These details indicate that Nelcynda was the main port for heavy cargoes like pepper and malabathrum (ships were still relatively light after leaving Muziris).
- 235 See P.M.E. 55. Discussed: Casson, (1989) 220.
- 236 Pliny, N.H. 6.26.105–6.
- 237 Details: P.M.E. 56; Pliny, N.H. 6.26.104–6; Ptolemy, Geog. 7.1.
- 238 See P.M.E. 51; 59. Discussed: Casson, (1989) 226; 228.
- 239 See P.M.E. 59.
- 240 Pliny, N.H. 6.26.106. Sailing timetables were partly determined by seasonal harvests. Black pepper was picked in October and November. After a few days drying in the sunshine, it could be packed into sacks and brought to the waiting Roman merchants. Details: Casson, (1989) 220.
- 241 Silappatikaram, 14.104–12. Discussed: Champakalakshmi, (1996) 187.
- 242 See P.M.E. 57.
- 243 In Roman terms these Indian craft had a cargo capacity of around 3,000 amphorae. See Pliny, N.H. 6.24.82–3. Discussed: De Romanis, (1997) 108.
- 244 Periplus: ‘Sangara are large dugout canoes held together by a yoke. The very large kolandiophonta sail across to Chryse and the Ganges region’. P.M.E. 60.
- 245 See P.M.E. 60.
- 246 Pliny: ‘To get pearls the Indians go to the islands . . . the most productive is Sri Lanka.’ Pliny, N.H. 9.54.
- 247 See P.M.E. 61. Strabo: ‘They say Sri Lanka sends great amounts of ivory, tortoise-shell and other merchandise to the markets of India’. Strabo, Geog. 2.1.14.

- 248 Strabo: 'Sri Lanka is a large island to the south of India. It stretches lengthwise in the direction of Ethiopia for more than 5000 stadia [c. 800 kilometres]'. Strabo, Geog. 2.1.14.
- 249 Periplus: 'There is an island called Sri Lanka that projects west across the ocean . . . it extends almost up to that part of East Africa that lies opposite . . . the parts of it that lie towards the north are civilized'. P.M.E. 61.
- 250 See Pliny, N.H. 6.24.84–6.
- 251 Ptolemy: 'among these rice, honey, ginger, beryl, amethyst, also gold, silver, and other metals are found'. See Ptolemy, Geog. 7.4.
- 252 Ptolemy's maps portray the general shape of Sri Lanka but he exaggerated the size of the island (to fit with classical tradition). Discussed: Weerakkody, (1997) 89; 97.
- 253 See Warmington, (1928) 124–5.
- 254 Details: Weerakkody, (1997) 54. The Chera trade port of Naura had become an emporium and Tyndis had developed into a coastal city. See Ptolemy, Geog. 7.1.
- 255 Details: Ptolemy, Geog. 7.1. Tamil literature: Pattinappalai, 184–93. Discussed: De Romanis, (1997) 115; Zvelebil, (1974) 22.
- 256 Pliny, N.H. 6.26.105.
- 257 See Maturaikkanci, 331–669. Discussed: Champakalakshmi, (1996) 122.
- 258 Dio Chrysostom, 35.22.
- 259 The Roman merchant fleet was composed of at least 120 ships and assuming that each ship carried just 20 professional guards, then well over 2,000 mercenaries could be arriving in India every year.
- 260 Discussed: De Romanis, (1997) 104–5.

261 Silappatikaram, 14.66–7.

262 Mullaippattu, 59–62.

263 Silappatikaram, 15.207–16. Romans called their heavy artillery ‘scorpions’ but the Tamils may have invented other imaginative names. ‘Machines invented by the Yavanas made with the help of their intelligence’; ‘The hundred-killer’; ‘Mechanical bows that shoot their own arrows’; ‘Human statues and figures of swans that spit out red flames’ (Greek fire?); ‘Mechanical owls, beams that crushed heads’ (Swing-beam cranes or clawed grappling hooks? Archimedes claw?). See Sivakasindamani, 1.101–4.

264 See P.M.E. 60.

265 See Purananuru, 30; Maduraikkanci, 54. Discussed in Champakalakshmi, (1996) 181.

266 Lighthouses: Kalam karai ilangu cudar or ‘the light that beckons the ship’. See Perumpanarrupatai, 349–51.

267 Manimekalai, 1.72; 3.45; 19.54; Silappatikaram, 5.117; 5.213; 6.127; 10.31.

268 Akananuru, 73.10; Silappatikaram, 5.63. Discussed: Champakalakshmi, (1996) 104; 127; Prasad, (1984) 129–30.

269 See Silappatikaram, 5.9–12. Discussed: De Romanis, (1997) 116–7; 151; Champakalakshmi, (1996) 105.

270 Details: Rajan, (1996) 100; Champakalakshmi (1996) 117; 127; Tomber, (2008) 138.

271 Garum ‘unappetising’ for Tamils see Will, (2004) 438–9.

272 Roman lamps: ‘The beautiful lamp seen on the statue made by the Yavanas’. Perungadai, 1.17.15.

273 See Whittaker, (2004) 164; Slane, (1996) 351–68; Begley, (1983) 461–81.

- 274 Unguentaria: See Slane, (1996) 367. Sand 'coating' on amphorae: Sidebotham, (1996b) 110. Significance of finds: Sidebotham, (1986a) 26; Wheeler, (1946) 41–5; Johnson & Whitcomb, (1979) 68–70; Whitcomb, (1982) 64; 67; 69. Tomber, (2008) 148–50.
- 275 See Begley, (1996) 23–4; Champakalakshmi, (1996) 135.
- 276 Mahadevan, (1996) 291.
- 277 See P.M.E. 62.
- 278 See P.M.E. 63.
- 279 See P.M.E. 63.
- 280 See P.M.E. 64.
- 281 See P.M.E. 66. Discussed: Casson, (1989) 238.
- 282 Discussed: Berggren & Jones, (2000) 26–7; 74.
- 283 Ptolemy, Geog. 7.1.
- 284 Ptolemy, Geog. 7.1 (diamonds); 7.2 (Ganges).
- 285 Paloura was a launching point for Roman ships sailing straight across the sea to Burma. Ptolemy reports: 'The sail across from Paloura to Sada is 13,000 stades in the direction of the equatorial sunrise (due east)' (Ptolemy, Geog. 1.13). Ships also made crossings from the nearby emporium of Alosygni, a port used by: 'those who sail and navigate the bay'. Ptolemy, Geog. 7.1.
- 286 Indian trade contact with an overseas 'Golden' land. See: Jatakas, 3.360; 4.442; Arthasastra, 2.11.59. Discussed: Prasad, (1984) 143; Casson, (1984) 237; Glover, (1996a) 130. Thapar, (2002) 243.
- 287 See Ptolemy, Geog. 7.2.

- 288 The Roman slaves exported to Burma would have included musicians similar to the servants sent to the Saka courts (P.M.E. 49). The group seen by the Chinese included conjurors and jugglers. See Hou Hanshu, 5.
- 289 They told the Chinese they came from: ‘West of the Sea’ and the Chinese concluded: ‘West of the sea is in fact Rome. To the south-west, the State of Shan [in Burma] communicates with Rome’. Hou Hanshu, 5. Discussed: Leslie & Gardiner, (1996) 150–1.
- 290 Ptolemy, Geog. 1.14.
- 291 Discussed: Warmington, (1928) 128–9.
- 292 Ptolemy: ‘[Alexandros] records that after this they traverse from Tamala over the Golden Peninsula. This crossing is 1,600 stades, in the direction of the winter sunrise (due East)’. Ptolemy, Geog. 1.14. Discussed: Berggren & Jones, (2000) 75 fn. 5.
- 293 The Roman trade routes described by Alexandros are measured in Greek stadia, but the information he received from Indian traders only reported the number of days travelled.
- 294 Ptolemy, Geog. 7.3.
- 295 Ptolemy, Geog. 1.14. No Sumatra; unless Labadius, ‘Barley Island’ is Sumatra. Ptolemy: ‘Labadius is said to be fruitful and produces much gold’. Also islands in area inhabited by ‘Satyrs’ and cannibals (Ptolemy, Geog. 7.3). See Warmington, (1928) 128–9.
- 296 Ptolemy, Geog. 1.14; 7.3. Discussed: Warmington, (1928)129–30; Ferguson, (1978) 584–5; Young, (2001) 34.
- 297 See Hou Hanshu, 88.12; Huai-nan Tzu, 18.21. Discussed: Yu, (1967) 182.
- 298 Objects said to be ‘gold medallions’ (possibly aurei) of Marcus Aurelius and Antoninus Pius have been found at Oc-ao in southern Vietnam. Details: Ray, (1994) 212.

- 299 Plague: 'There was such a pestilence that the dead were removed in carts and wagons . . . Thousands were carried off by the disease, including many nobles.' Historia Augusta, Marcus Aurelius, 13. Pandemic spread to Rhine and Gaul: See Ammianus, Roman History, 23.6.24. Discussed: Potter & Mattingly, (1999) 105–6.
- 300 Details: McNeill, (1976) 116; Duncan-Jones, (1996) 108–9.
- 301 Details: McNeill, (1976) 107–9; Duncan-Jones, (1996) 117–8; 136;
- 302 See McNeill, (1976) 107–8.
- 303 See Jerome, Chronicle, 236th Olympiad = AD 168.
- 304 See McNeill, (1976) 116; Duncan-Jones, (1996) 118–20.
- 305 See McNeill, (1976) 117; 136; Duncan-Jones, (1996) 135.
- 306 Duncan-Jones, (1996) 116–7; 121. An association of traders at the Italian port of Puteoli petitioned for help in AD 174 because their group had lost so many members. OGIS 595.
- 307 Details: Bagnall, (2000) 188–92.
- 308 Details: Berghaus, (1991) 110; Sidebotham, (1989) 499; (2008) 181–2; Thapar, (1997) 39.
- 309 Discussed: Young, (2001) 82; Tomber, (2008) 130.

### هوامش الفصل الثالث: روما وطرق التجارة العربية

- 1 Details: Singer, (2007) 6.
- 2 For instance: Egyptian Book of the Dead, Papyrus of Nu, sheet 21, chapter 30, rubric 2.7. ('Anoint the mouth of the body with myrrh unguent and recite the following words of magical power'); Papyrus of Ani, plate 5 (servant carrying myrrh and unguent pots). Also: Old Testament, Song of Solomon, 3. Era discussed: Singer (2007) 24–5; Peacock, (2006) 1.

- 3 For instance: Sappho, To Aphrodite; Diogenes Laertius, Life of Pythagoras, 8.8. Full details: Crone, (1987) 17.
- 4 Scythian women: Herodotus, 4.75. Babylonian use: 1.198. Discussed: Singer, (2007) 6.
- 5 Herodotus, 1.183. Babylonian talents: over 30 tons. Also see Pliny, Natural History, 12.80.
- 6 See Herodotus, 1.183.
- 7 Greek talents: over 13 tons frankincense and over 2 tons of myrrh. See Plutarch, Alexander, 25; Pliny, N.H. 12.32.62–3.
- 8 Arrian, Campaigns of Alexander, 7.9; 7.19.
- 9 Seleucid military interests in the Persian Gulf: see Salles, (1996a) 260; 262.
- 10 Diodorus Siculus, 19.94. Discussed: Crone, (1987) 18.
- 11 Diodorus Siculus: ‘The Gerrhaeans and Minaeans convey all the frankincense and the other aromatic wares that they bring in from southern Arabia to Nabatea and then on to Palestine’. (Diodorus Siculus, 3.42. See also Strabo, Geography. 16.4.18). The coffin of a Minaean frankincense merchant named Zayd’il was found at Memphis in Egypt (Late 2nd to early 1st century BC). See Singer, (2007) 13. Dedications from the sanctuary of Artemis on Delos record that Minaean and Hadramaut merchants were visiting the Greek island (Mid 2nd century BC). See Sedov, (2007) 101.
- 12 Diodorus Siculus, 19.95–6.
- 13 Discussed: Ray, (1994) 173.
- 14 Procopius, Persian Wars, 1.19.23–4 (6th century AD).
- 15 Strabo: ‘Frankincense and myrrh and other aromatics are bartered between merchants. They arrive in seventy days at Aila which is a city on the furthest

- recesses of the Red Sea, close to Gaza'. Strabo, Geog. 16.4.4. Information possibly derived from Eratosthenes (c. 275–194 BC). See Crone, (1987) 18.
- 16 Nabateans also travelled to the Yemen. A Sabaeen inscription mentions a Nabatean residing in this region presumably for trade. (1st century BC). RES 4153. See Sidebotham, (1986a) 93. Communities of Nabateans were also living in Egypt. For instance: fragmentary Ptolemaic inscription records a lease made between a Nabatean priest and a Palmyrene. See Littman and Meredith (1953) no. 81. Discussed: Sidebotham, (1986a) 96.
- 17 Diodorus Siculus: 'When the Ptolemaic kings in Alexandria opened the [Red Sea] waters to their merchants, the Arabs not only attacked the shipwrecked, but fitting out pirate vessels they preyed upon the voyagers . . . But later they were caught on the high seas by some quadrireme warships and punished just as they deserved'. Dio Cassius, 3.43.
- 18 Strabo: 'The Nabataeans had been peaceful, but then they launched small ships to plunder the vessels of people sailing from Egypt. They paid the penalty when a fleet went over and sacked their country'. Strabo, Geog. 16.4.4.
- 19 See Pliny, Natural History, 6.32.144.
- 20 Strabo, Geog. 16.4.21.
- 21 Ibid.
- 22 Strabo, Geog. 16.4.26.
- 23 The northerlies of the Red Sea Gulf made sailings to Aila difficult and time-consuming. Details: Whitewright, (2007) 85–7.
- 24 Strabo, Geog. 16.4.23 (many ships lost on crossing).
- 25 Ibid.
- 26 Strabo, Geog. 16.4.23. Discussed: Stoneman, (1992) 35; Sidebotham, (2008) 169.
- 27 Periplus Maris Erythraei, 19. Discussed: Millar, (1998) 124.

28 Debate: Young, (2001) 95–6. Conflicting views: Millar, (1998) 124.

29 See P.M.E. 19.

30 See Strabo, Geog. 16.4.21; 16.2.30–1; Pliny, N.H. 6.32.144–6.

31 Strabo, Geog. 16.4.24.

32 Discussed: Millar, (1998) 124.

33 Strabo, Geog. 16.2.20. Discussed: Millar, (1998) 125.

34 Roads extended from Petra as far as Palmyra. See Pliny, N.H. 6.32.

35 Pliny, N.H. 6.32. Discussed: Millar, (1998) 126. See: Potts, (1988) 127–62.

36 Strabo, Geog. 17.1.13. See Sidebotham, (1986a) 49.

37 Strabo, Geog. 16.4.24.

38 Voyages were made from January to September (September favoured). See P.M.E. 26.

39 See P.M.E. 49.

40 See P.M.E. 2.

41 See P.M.E. 3.

42 Discussed: Munro, (1996) 406.

43 Pliny, N.H. 6.32.145. See also Ptolemy, Geography 4.7.

44 Previous merchant visitors had encamped on a nearby headland but barbarian raiders could overrun this site via a causeway. See P.M.E. 4.

45 See P.M.E. 4.

46 See P.M.E. 6.

47 See P.M.E. 4.

48 See P.M.E. 5.

49 Pliny may be using Juba as a source. He reports: 'The [Ethiopians and Somali peoples] bring ivory in large quantities to Adulis along with rhinoceros horns, hippopotamus hides, tortoise-shell, hawkmoths and slaves'. Hawkmoths are giant colourful insects, possibly a delicacy. See Pliny, N.H. 6.34 (Some translations: 'shell', 'apes', and 'slaves').

50 Including linens and double-fringed items, perhaps square scarves or throws. Discussed: Casson, (1989) 111.

51 See P.M.E. 6.

52 Ibid.

53 Discussed: Casson, (1989) 112.

54 See P.M.E. 6.

55 Procopius, Persian Wars, 1.19.27–8.

56 Pliny, N.H. 6.35.180–1. The team of explorers included centurions (Seneca, Natural Questions, 6.8.3–4). See also: Dio Cassius, 63.8.

57 See P.M.E. 5.

58 See P.M.E. 6.

59 Procopius, Persian Wars, 1.19.17–19.

60 See Pliny, N.H. 6.34.

61 For instance: see Pliny, N.H. 12.69.

62 Casson, (1989) 122–6. African 'cinnamon', see Pliny, N.H. 12.42. Discussed: Crone, (1987) 36; 253–63.

63 Pliny, N.H. 2.42.88–9.

64 See P.M.E. 14.

65 See P.M.E. 7.

66 Mundu dealers had a reputation for being ‘hard bargainers’. See P.M.E. 9.

67 See P.M.E. 7–18. Locations discussed: Casson, (1989) 127–30.

68 P.M.E. 30. See also: Strabo, Geog. 16.4.14; Ptolemy, Geog. 1.9 (the ‘Aromatic Lands’). Discussed: Casson, (1989) 129.

69 See Casson, (1989) 132.

70 See P.M.E. 14; 16.

71 P.M.E. 7–10. Including tunics and inexpensive woollen cloaks from the Arsinoe district of Egypt. See P.M.E. 8.

72 See Casson, (1989) 118.

73 See P.M.E. 7.

74 See P.M.E. 8–10.

75 See P.M.E. 14. Roman gemstones: see Casson, (1989) 128.

76 See P.M.E. 7.

77 See P.M.E. 8.

78 See P.M.E. 9.

79 See P.M.E. 12–13.

80 See P.M.E. 13. Slaves were available at Malao but rarely offered. See P.M.E. 8. Somali markets shipped captives in local craft to Ethiopia. See Pliny, N.H. 6.34.173–4.

81 See P.M.E. 10.

82 See P.M.E. 8; 21.

83 See Casson (1989) 287. Estimate: 30 days sailing Red Sea. Pliny indicates ships bound for India spent 26 days visiting markets in the Aden Gulf (the ocean crossing to India took 14 days making it a 40 day sailing from Ocelis to Muziris). See Pliny, N.H. 6.26.84; 6.26.104.

84 Rhapta, meaning 'sewn', received its name from the Arabian ships that frequented the port. See P.M.E. 15–16. Discussed: Casson, (1989) 134–6; 140–2.

85 The native peoples in the regions surrounding Rhapta lived in large family groups. Periplus: 'Large men inhabit this region and they till the soil. Each one has his own place and behaves like a chief ' and 'Through continual intercourse and intermarriage Arab skippers and agents have become familiar with the area and its language.' P.M.E. 16.

86 See P.M.E. 17.

87 Ptolemy, Geog. 1.9.

88 Ibid. Discussed: Berggren & Jones, (2000) 68.

89 See P.M.E. 18.

90 See P.M.E. 20.

91 Pliny, N.H. 6.34.175–6 (information possibly from Juba).

92 See P.M.E. 20.

93 See P.M.E. 21.

94 See P.M.E. 24.

95 See P.M.E. 24.

96 Discussed: Casson, (1989) 153.

97 See P.M.E. 24.

98 See P.M.E. 22.

99 See P.M.E. 23.

100 See P.M.E. 24.

101 Stacte was made by crushing and pressing myrrh and mixing the resulting oil with further aromatic ingredients.

102 For instance: P.M.E. 31.

103 Details: Casson, (1989) 156.

104 See P.M.E. 24.

105 See P.M.E. 25.

106 Pliny: 'those sailing to India find that Ocelis is a very convenient place for departure'. Pliny, N.H. 6.26.104. Discussed: Casson, (1989) 158.

107 See P.M.E. 26. Details: Casson, (1989) 159.

108 Theories discussed: Casson, (1989) 160; Seland, (2005) 60–4. Writing about the Yemen Pliny reports: 'Only Aelius Gallus of the equestrian order has sent Roman forces into this region'. Pliny, N.H. 6.32.160.

109 Augustus, Res Gestae, 5.26. Campaign described: Strabo, Geog. 16.4.22–4. Mentioned: Pliny, N.H. 6.32.160–1, Josephus, Jewish Antiquities, 15.9.3; Dio Cassius, 53.29. Discussed: Sidebotham, (1986a) 590–4; Seland, (2005) 61.

110 Strabo: 'From their trafficking of incense the Sabaeans and the Gerraeans have become richest of all the Arabians. They consequently have a vast store of both gold and silver articles including couches, tripods, bowls, and drinking-vessels. They have very costly houses with doors, walls and ceilings decorated with

- ivory, gold and silver, and set with precious stones.’ Strabo Geog. 16.4.19. See also: Pliny, N.H. 6.32.162. Discussed: Singer, (2007) 10.
- 111 Strabo: ‘The Sabaeans are a very large tribe in whose country myrrh, frankincense and cinnamon are produced’ and ‘From the Sabaeans the Arabs who live close to one another receive in continuous succession the loads of aromatics and deliver them to their neighbours as far as Syria and Mesopotamia’. Also: ‘The Sabaeans people engage partly in farming and partly in the traffic of aromatics, including both local [Arabian] goods and goods from Ethiopia. To get the latter they sail across the [Red Sea] straits in leather boats.’ Strabo, Geog. 16.4.19. Discussed: Crone, (1987) 23; Groom, (1981) 243.
- 112 Sabaeans as the military objective. See Horace, Odes, 1.29. Frankincense and myrrh were connected with kingship and divinity. See Matthew, 2.11.
- 113 Strabo, Geog. 16.4.22.
- 114 Strabo: ‘Gallus built more than eighty boats, biremes and triremes at Clysma . . . before he realized that he had been thoroughly deceived.’ Strabo, Geog. 16.4.23.
- 115 Roman army (10,000 troops). Nabateans allies (1,000 soldiers commanded by a vizier named Syllaes). King Herod of Judaea also sent a contingent of 500 Jewish troops. Strabo, Geog. 16.4.23. Discussed: Sidebotham, (1989) 493–4.
- 116 See Strabo, Geog. 16.4.24; Dio Cassius, 53.29. Discussed: Sidebotham, (1989) 493–4.
- 117 See P.M.E. 23. Pliny refers to ‘the ambassadors that have come from Arabia in my own lifetime’. They possibly offered diplomatic gifts that included whole branches from the myrrh tree. See Pliny, N.H. 12.31.
- 118 Ptolemy, Geography. 6.7. Discussed: Casson, (1989) 159. A Greek temple inscription from Coptos records that a resident from Aden was visiting Egypt in AD 70, probably for trade purposes (IGRR. 1.1172). Details: Sidebotham, (1986a) 99.
- 119 Discussed: Sedov, (1996) 23–4; (2007) 100.

- 120 See Tomber, (2008) 105; Singer, (2007) 22; 25.
- 121 See Sedov, (1996) 12.
- 122 The black rock with its ominous ruins has become known in modern times as Husn al-Ghurab or 'Fortress of the Crows'. Discussed: Sedov, (2007) 71; 101; Singer, (2007) 24.
- 123 Sometime in antiquity a violent fire destroyed the incense storerooms, carbonising large amounts of their precious contents. Amongst the debris archaeologists found the remains of large palm baskets and woven bags used to carry and store the collected frankincense crop. Details of site see Sedov, (2007) 74; 76; 90–1.
- 124 Details: Tomber, (2008) 103; Sedov, (2007) 73–4; 101.
- 125 See Sedov, (2007) 74; 91–2; Singer, (2007) 24.
- 126 See P.M.E. 27. See Casson, (1989) 163; Singer, (2007) 23.
- 127 See P.M.E. 27; 36. See Sedov, (2007) 99.
- 128 Discussed: Sedov, (2007) 60; 78; 102.
- 129 See Sedov, (1996) 25; (2007) 78.
- 130 Sedov, (2007) 76; 78; 102. Pottery evidence can only be suggestive. Some merchants favoured perishable containers; others re-used foreign vessels for moving local produce.
- 131 See P.M.E. 28.
- 132 Wheat intended for Roman subjects resident at the port or for limited market exchange.
- 133 Mostly Coan-style amphorae produced in Italy, Egypt and the Greek east (Late 1st century BC – Mid 2nd century AD). See Sedov, (2007) 78. Some of the Roman amphorae may have carried wheat. See Sedov, (1996) 24; (2007) 101–2.

- 134 Details: Sedov, (1996) 12; 15; (2007) 76; 78; 101.
- 135 Discussed: Singer, (2007) 23; Tomber, (2008) 104.
- 136 Manufactured from 15 BC to 15 AD. See Sedov, (1996) 15; 60.
- 137 The stamp impression 'AGATE' would identify the manufacturer as AGATHEMERUS (NAEVI) who owned workshops in and around Catania. See Sedov, (1996) 60.
- 138 Details: Sedov, (2007) 78.
- 139 Details: Tomber, (2008) 105.
- 140 See P.M.E. 28. See Dalby, (2000) 195.
- 141 See Casson, (1989) 164–5.
- 142 Local pottery of Qana known as zirs probably used to store food produce. See Sedov, (2007) 76; 102.
- 143 See Sedov, (1996) 25.
- 144 Peacock, (2006) 28; 62.
- 145 Details: Ibid. 30–1
- 146 Details: Ibid. 29; 59; 62.
- 147 By the time Berenice began functioning as a loading harbour Qana had replaced Aden as the centre for incense trade.
- 148 See P.M.E. 29. Discussed: Singer, (2007) 8.
- 149 A different account is offered by Pliny, N.H. 12.30 (information possibly received from Juba, c. 48 BC–AD 23). See information in N.H. 12.31. Discussed: Singer, (2007) 10.
- 150 See P.M.E. 29.

151 See P.M.E. 27; 30.

152 Ibid.

153 Details: Tomber, (2008) 106.

154 Details: Singer, (2007) 23.

155 Discussed: Sedov, (1996) 24.

156 See P.M.E. 32. Indian goods destined for Far Side markets on return sailings to Egypt. See P.M.E. 14.

157 See P.M.E. 32.

158 Pliny, N.H. 12.32.58.

159 Details: Singer, (2007) 22.

160 Merchants from the Yemen were visiting Syria in the Augustan era, but the ventures that were taking them into this region are not described. They may have been mostly maritime (via the Red Sea then overland through Petra). See Strabo, Geog. 16.2.20; 16.4.4.

161 Strabo did not know about direct routes into the Yemen. Gallus was surprised to find the journey from Sabaeen territory to the Nabatean kingdom could be completed in only 60 days (See Strabo, Geog. 16.4.24). The Periplus was unaware of the incense trail and does not mention a second frankincense harvest.

162 See Singer, (2007) 22.

163 Pliny, N.H. 12.32.63. Discussed: Crone, (1987) 19.

164 Details: Singer, (2007) 12.

165 Pliny, N.H. 12.32.63–4.

166 Ibid.

- 167 Pliny: 'Frankincense can only be exported through the country of the Gebanitae (Qataban) and accordingly a tax is paid to the king of that people.' (Pliny, N.H. 6.32.64). Timna was a large city that had 65 large temples within its districts (see Pliny, N.H. 6.32.153–4). Roman finds at Timna include Italian and Syrian sigillata (Augustan era), glazed wares from Egypt and Asia Minor. Details: Tomber, (2008) 105. Discussed: Singer, (2007) 25.
- 168 Pliny: 'The growers of myrrh pay a fourth part of their stocks to the Gebanitae (Qataban) king. Myrrh is bought indiscriminately by the common people and packed into bags which are later sorted out by our perfumers.' See Pliny, N.H. 12.35.
- 169 Details: Singer, (2007) 15–6.
- 170 See Singer, (2007) 13.
- 171 Pliny, N.H. 12.30.
- 172 Discussed: Singer, (2007) 16. Gerrha connection (Persian Gulf; Hellenic era): Dio Siculus, 3.42; Strabo, Geog. 16.4.18. Petra connection: Pliny, N.H. 6.32.144–6.
- 173 Estimate: 69–88 days travel. See Groom, (1981) 213. Discussed: Millar, (1998) 123–4; Stoneman, (1992) 35.
- 174 Pliny: 'Timna is 1,485 miles distant from the town of Gaza in Judea on the Mediterranean coast. The journey is divided into 65 stages with halts for camels. The king's secretaries, and the guards, and their attendants, and the gate-keepers and even the servants, all take a portion of this incense.' See Pliny, N.H. 12.32.65.
- 175 Discussed: Millar, (1998) 125–6; Crone, (1987) 19.
- 176 Pliny, N.H. 12.32.65.
- 177 See Millar, (1998) 124.

- 178 See Sedov, (2007) 94. Caravan routes from Petra to the Persian Gulf covered a distance of at least 1,300 kilometres. Discussed: Millar, (1998) 126.
- 179 See Peacock, (2006) 62.
- 180 Discussed: Bennet, (1997) 58; Young, (2001) 117–120; Stoneman, (1992) 38.
- 181 Julius Apollinaris a secretary of Cyrenaica III. See P. Mich. 466. Discussed: Elton, (1996) 80. Perhaps similar to the Rhinocoloura route mentioned by Strabo. See Strabo, Geog. 16.24.
- 182 Details: Sidebotham, (1986a) 93–5; (1988) 497.
- 183 The Nabatean ‘Troglodytes’. See Pliny, N.H. 12.44.
- 184 Pliny: ‘The right of regulating the sale of the cinnamon belongs solely to the king of the Gebanites (Qataban) who opens the market for it by public proclamation’. See Pliny, N.H. 12.32.93.
- 185 Pliny, N.H. 12.32.93–4.
- 186 See P.M.E. 30.
- 187 Periplus: ‘Trade with Socotra used to be carried on by some of the shippers from Muza and also by ships that chanced upon the island on the return sailing from Barygaza and the Malabar Coast’. P.M.E. 31.
- 188 Possible stonewall boundary divisions between commercial plantations. Details: Sedov, (2007) 100.
- 189 See P.M.E. 30–1.
- 190 Details: Casson, (1989) 168–9.
- 191 See P.M.E. 31. Discussed: Casson, (1989) 169.
- 192 Periplus: ‘The region is under the rule of a governor called Mapharitis and by ancient right it is subject to the [Homerite] kingdom of Arabia. Merchants from

Muza have been given Rhapta as a grant from the king and they collect taxes from it'. P.M.E. 16. Discussed: Casson, (1989) 140–2.

193 Ptolemy, Geog. 4.8.

194 Centurions stationed outpost near Berenice (Nicanor made deliveries to a military granary). See O. Petr. No. 245 (AD 62). Details: Sidebotham, (2008) 189–90; (1986a) 55; Adams, (2008) 224. (Also note ostraca: BE 50). Naval station at Myos Hormos (Augustan era). See Strabo, Geog. 17.1.45. An ostraca from Myos Hormos mentions a man named Satornilus Tessararius who was possibly a military helmsman. Details: Sidebotham, (1986a) 69.

195 Eutropius: 'Trajan fitted out a fleet for the Erythraean Sea so that he might use it to lay waste to the coasts of India'. Eutropius, 8.3. Discussed: Adams, (2007) 35.

196 Carved on a rectangular block of calcareous stone from a small to medium sized monument. Exact modern location: Site of Gharrain, located west of Farasan town. Details: Phillips, (2004) 245.

197 See Phillips, (2004) 244.

198 Details: Ibid.

199 Explanations for the 'Hercules' command: legends of the region (See Agatharchides, 5.97) or the emblem of the garrison (see Phillips, (2004) 248).

200 See Phillips, (2004) 247.

201 Pliny reports that Annius Plocamus, 'gained a tax contract for the Red Sea from the Roman treasury' (See Pliny, 6.26.84). In a list of income received by the Roman treasury Statius refers to wealth 'gathered by the divers who search the eastern seas' (Statius, *Silvae*, 3.3.89). This could be a reference to Roman controlled pearl fisheries in the Red Sea (See Millar, (2003) 69–70). The Farasan Command could have been established to protect this lucrative state business.

202 See P.M.E. 23.

203 See P.M.E. 16; 31.

204 See P.M.E. 19.

205 For the significance of nearby Ocelis: P.M.E. 25; Pliny, N.H. 6.104.

206 Possibility of other Roman 'relay' stations, see Phillips, (2004) 246.

207 Discussed: Phillips, (2004) 239; 248. Theory that Cornelius was connected with the Gallus campaign, see Bowersock, (1983) 148–53.

208 Decline discussed: Crone, (1987) 24; 27–8; Young, (2001) 123–35.

### هوامش الفصل الرابع: طرق التجارة عبر آسيا والاتصال بطريق الحرير

1 The German phrase 'Die Seidenstrassen' was first used in the 19th century by a geographer named Baron Ferdinand von Richthofen (1833–1905). Ferdinand von Richthofen was a relative of the notorious German fighter ace 'The Red Baron'. See Christian, (2000) 2.

2 Huan Kuan, Yan Tie Lun (Discourses on Salt and Iron), 14.70 (an early stage in the development of Xiongnu society). Quoted and discussed: Yu, (1967) 40. (This passage of the Yan Tie Lun is not available in all translations).

3 Details: Yu, (1967) 41–2.

4 Discussed: Ibid. 36; 46.

5 Sima Qian, Shiji (Records of the Grand Historian) 110.8 (170 BC).

6 Discussed: Yu, (1967) 11; 13–4; 37; 43–4; 46. Some Xiongnu forces who surrendered to the Chinese were subsequently incorporated into the Han army (Ibid. 14).

7 Fan Ye, Han Shu (History of the Former Han Dynasty) 94.2. Details: Yu, (1967) 45–7.

8 See table in Yu, (1967) 47. Discussed: Raschke, (1978) 615; 617–8.

- 9 Fed by Han subsidies and sustained by Chinese trade, the southern Xiongnu population rapidly increased (60,000 in the mid 1st century BC increased to 237,300 by AD 90). See Hou Hanshu, 199.6. Discussed: Yu, (1967) 50–1.
- 10 Suggested Han policy: ‘We should immediately open up many large-sized border markets in locations of strategic importance. In each of these market places sufficient military forces must be stationed for our self protection.’ Chi I, Hsin Shu, 4.41.
- 11 Huan Kuan, Yan Tie Lun (Discourses on Salt and Iron), 2.14. They also smuggled supplies of contraband items (Chinese iron). Details: Lui, (1988) 14; Yu, (1967) 121–3; 191.
- 12 See Hou Hanshu, 120.2 (Wuhuan barbarians from the northwest frontiers). Details: Yu, (1967) 31.
- 13 Han: ‘The Xiongnu need the border markets and they have sought desperately to obtain them from us, even resorting to force’. Chi I, Hsin Shu, 4.41 (see: 4.5). Quoted in Sinor, (1990) 119.
- 14 See Yu, (1967) 100. Discussed: Franck & Brownstone, (1986) 107. Markets used for control: ‘Our markets beneath the wall will surely swarm with the Xiongnu. If their kings and generals try to force the population to return to the north, the people will turn and attack their rulers’. Jia Yi, Hsin Shu, 4.41.
- 15 Theories: Raschke (1978) 622–3; Ball, (2000) 138–9.
- 16 ‘Synthetic’ motifs in archaeological finds, see Christian, (2000) 15.
- 17 The modern name ‘Taklamakan’ is derived from the Uigur language meaning: ‘Go in and you’ll never come out’.
- 18 See Franck & Brownstone, (1986) 92; 101; Lui, (1988) 16.
- 19 See Thapar, (2002) 238; Yu, (1967) 151.
- 20 See Periplus Maris Erythraei, 64.

21 Tung-kuan Han-chi, 143. Yu, (1967) 212.

22 See details and discussion in Thapar, (2002) 255.

23 Hou Hanshu, 77.4. See Yu, (1967) 138.

24 Chuan Hou-Han Wen, 25.4 (events in the late 1st century AD). Discussed: Yu, (1967) 195; Lui, (1988) 16.

25 See Yu, (1967) 151.

26 See Waugh, (2004) 1.

27 Distances Sogdia to China: outer Han frontiers (at least 2,500 kilometres); the Han capitol Luoyang (perhaps 4,000 kilometres). The Arabian caravan trail from Dhofar to Gaza covered a distance of at least 3,000 kilometres.

28 Sogdian Ancient Letter, no. 2.

29 Ibid.

30 Ibid. Discussed: Waugh, (2004) 1.

31 Sogdian Ancient Letter, no. 2.

32 Ibid.

33 Ibid.

34 Ibid.

35 Sogdian Ancient Letter, No. 5.

36 Strabo, Geography. 2.1.15.

37 Pliny, Natural History 6.5.

38 Strabo, Geog. 11.12.17.

- 39 Discussed: Charlesworth, (1924) 104.
- 40 Pliny, N.H. 6.19. Myth in region: anchor of the Argo on display at Phasis. See Arrian, *Periplus of the Black Sea*, 9.2–3.
- 41 Caspian ships were not comparable to the Greco-Roman freighters that plied the busy sea-lanes of the Mediterranean and Black Sea. Strabo: ‘The Caspian Sea has received little attention because the governors of this region are barbarians and all of the neighbouring country is full of brigands and nomads who occupy deserted regions’. See Strabo, *Geog.* 11.7.2. Discussed: Warmington, (1928) 28.
- 42 Strabo, *Geog.* 11.2.1.
- 43 Strabo: ‘The Colchic tribes all speak different languages because of their stubbornness and ferocity. They live in scattered groups and do not communicate much with one another’. See Strabo, *Geog.* 11.2.1. Discussed: Warmington, (1928) 26–7.
- 44 The Roman governor Arrian reports that a ‘secure fort with war engines’ was maintained at Phasis (2nd century AD). See Arrian, *Periplus of the Black Sea*: ‘400 select troops are quartered for the safety of those who sail’ (9.3); settlement of veterans at Phasis (9.5); further garrison at Dioscurias (Sebastopolis) (10.3). 45 ILS 8795.
- 46 Caspian rock inscription (Azerbaijan): AE 1951 263 (Dating to the reign of Domitian, AD 81–96). Details: Whittaker, (2000) 309.
- 47 The Roman garrisons would have demanded regular provisions and this required secure communication routes.
- 48 Significance of the Syrian routes into Mesopotamia discussed in Millar, (1998) 129–30; 136; Young, (2001) 187; 194.
- 49 Discussed: Charlesworth, (1924) 100–1; Young, (2001) 187.
- 50 See Philostratus, *Life of Apollonius of Tyana*, 1.20. Discussed: Elton, (1996) 89.
- 51 Josephus, *Jewish Antiquities*, 18.9.1. Discussed: Elton, (1996) 99.

52 New Testament, Acts, 2.9.

53 Samuel's home city was Nehardea near Babylon, but he was sent to Nisibis to be educated. Judah Ben Bathyra was an adult before the destruction of the Jewish Temple in AD 70 and Samuel Ben Abba was still alive in the mid second century AD. Discussed: Young, (2001) 190.

54 Midrash Samuel, 10. Translation: Newman, (1945) 204.

55 Procopius, Secret History, 25.14–5.

56 Cotton and Cogle, (1995) no. 33. Details: Millar, (1998) 129.

57 Discussed: Ibid. 126.

58 Pliny, N.H. 6.32.143–4.

59 Strabo, Geog. 16.1.27.

60 Ibid.

61 Ibid.

62 Discussed: Millar, (1998) 126–7. Isidore suggests other routes in his Parthian Stations. See Isidore, 1. Discussed: Charlesworth, (1924) 101. Routes used by Trajan in his Parthian campaign, see Dio Cassius, 68.21–2; 68.26.

63 Pliny, N.H. 6.30.122–3.

64 Ibid.

65 Inv. 9.6. Details: Young, (2001) 190.

66 Strabo: 'The Parthian kings are accustomed to spend the winters at Ctesiphon because of the good climate, but because of ancient tradition they spend their summers at Ecbatana and Hyrcania.' See Strabo, Geog. 16.1.16.

67 Ibid.

68 Pliny, N.H. 6.30.122–3.

69 Strabo, Geog. 16.1.5; 16.1.16.

70 Pliny, N.H. 6.30.123.

71 CIS 2.3913 (Dated AD 137). Discussed: Millar, (1998) 171; Matthews, (1984) 157–80.

72 Discussed in Young, (2001) 139; 149–57; 168; Gawlikowski, (1994) 32–3.

73 Appian, Civil Wars, 5.9. Discussed: Young, (2001) 136; Gawlikowski, (1994) 27; Stoneman, (1992) 31; Millar, (1998) 131.

74 Inv. 9.6 (Seleucia: AD 19); Inv. 9.11 (Babylon: AD 24). Discussed: Young, (2001) 140; Stoneman, (1992) 45.

75 See Young, (2001) 139.

76 See Stoneman, (1992) 45.

77 Inv. 10.40. Discussed: Young (2001) 140.

78 Pliny, N.H. 5.21.88.

79 Discussed: Young, (2001) 136–7; 143; Elton, (1996) 90–2.

80 Discussed: Stoneman, (1992) 45.

81 Palmyran trade routes, see Young, (2001) 148; Gawlikowski, (1994) 31.

82 Compare: Samarkand to China (over 2,500 kilometres); Arabian trail from Dhofar to Gaza (at least 3,000 kilometres); Egyptian route from Coptos to Berenice (370 kilometres).

83 Josephus, Jewish Antiquities, 8.6.1.

- 84 Estimates: eight days journey from Antioch to Palmyra. Th en six days from Palmyra to Dura-Europos (closest town on the Euphrates). Th en 12 days from Dura to Bablyon. See Millar, (1998) 130–1.
- 85 For instance: CIS 2.3917. See Stoneman, (1992) 45.
- 86 In the catalogues consulted by Young, (2001) 140.
- 87 Dio Cassius: ‘Trajan easily subdued the land of Mesene on the Tigris River and won over their king Athambelus . . . Athambelus remained loyal to Trajan even though he was ordered to pay tribute and the inhabitants of Charax received the Emperor kindly’. See Dio Cassius, 68.28. Discussed: Young, (2001) 145–6.
- 88 Dio Cassius, 68.29.
- 89 See Ibid. 68.29–32.
- 90 See CIS 2.3973; CIL 2.3934. Details: Elton, (1996) 91–3. A detachment of Palmyrene soldiers appears at the strategic city of Dura-Europos (Dura, 7–8, no. 909). Details: Elton, (1996) 91–3. An inscription refers to a Nabatean cavalryman serving with Palmyrene troops at Hit (AD 132) (See CIS 2.3973). Details: Young, (2001) 158–9.
- 91 Details: Gawlikowski, (1985) 15–26; Elton, (1996) 93.
- 92 Details: Young, (2001) 149.
- 93 Route from Antioch via Palmyra to Mesopotamia. Egyptian route: see Pliny, N.H. 6.26.101–4.
- 94 Quoted and discussed: Millar, (1998) 133.
- 95 SEG 7.138. Discussed: Young, (2001) 161; Elton, (1996) 93.
- 96 Thilouana: Inv. 10.38; Orodos: Inv. 10.114; Augustan Temple: CIS 2.3917. Discussed: Elton, (1996) 94.
- 97 In catalogues consulted by Young, (2001) 144.

98 See Appian, *Civil Wars*, 5.9.

99 Discussed: Elton, (1996) 91–2. Theories examined: Young, (2001) 154–6.

100 For instance: CIS 2.3948 (AD 193). Details: Millar, (1998) 132.

101 See *Ibid.* 137.

102 Inv. 10.81. Discussed: Elton, (1996) 91–3.

103 Strabo suggests the Scythian shepherds could become ‘brigands’ when pastures failed (Geog. 16.1.26). Strabo: ‘[Upper Euphrates:] it is hard to travel among communities who are strong willed. It is hard to establish a common standard of tribute that is advantageous for the merchant’ (Geog. 16.1.27).

104 See: Inv. 10.38 (Phorath); Inv. 10.112 (Mesene). Discussed: Stoneman, (1992) 45.

105 Theories: Young, (2001) 144–5.

106 Details: *Ibid.*

107 Pliny, N.H. 6.32.146. Discussed: Young, (2001) 189.

108 Description of Charax see Stoneman: ‘One may imagine an imposing commercial quarter, like Corporation Square at Ostia, the port of Rome, with offices of all the merchants surrounding a courtyard where cameleers, retailers, armed escorts, and the gaudy-robed merchants themselves would jostle and bargain among their bales of raw, dyed, and woven wares’. Stoneman, (1992) 45.

109 The Hymn of the Pearl which appears in the Syriac Acts of Thomas, 109. Discussed: Stoneman, (1992) 45; Millar, (1998) 128.

110 Pliny, N.H. 6.31.139–40.

111 Dio Cassius, 68.29.1. Discussed: Millar, (1998) 128.

112 Discussed: Ibid. 136; Salles, (1995) 140.

113 There is currently no evidence that the Palmyrenes extended their trade ventures south to reach markets in the Deccan Plateau or the Tamil lands.

114 Inv. 10.96. See Elton, (1996) 91–2.

115 See Colledge, (1976) 76, pl. 103.

116 Pliny, N.H. 6.32.149.

117 See P.M.E. 36. Discussed: Casson, (1989) 180–1.

118 Persian Gulf and Parthian territories see: Ptolemy, Geog. 6.1–5.

118 Views: Stoneman, (1992) 39; Young, (2001) 142.

119 Discussed: Stauffer, (1996) 425–30.

120 See Pliny, N.H. 6.32.148.

121 See P.M.E. 39; 49.

122 See P.M.E. 24; 28.

123 See P.M.E. 36.

124 An expense of 300 ‘old gold’ aurei (AD 193). See Inv. 3.28.

125 Persian Gulf exports to India and Arabia. See Periplus: ‘Persian pearls, purple cloth, native clothing, wine, large amounts of dates, gold, slaves’ (P.M.E. 36). Roman slaves trafficked into Mesopotamia: see Philostratus, Life of Apollonius of Tyana, 1.20.

125 Views: Young, (2001) 193.

126 Inv. 10.29 (AD 161). Discussed: Young, (2001) 149.

- 127 Possible significance of Edessa, see Young, (2001) 149; 193–4. Tyre clothing industry, see Strabo, Geog. 16.2.22–3; Pliny, N.H. 5.16.76–7.
- 128 Discussed: Millar, (1998) 134.
- 129 Acts, 21.1–8.
- 130 Acts, 27.1–6.
- 131 Galen, On the mixtures and properties of simple drugs, 12.215. Quoted with discussion: Millar, (1998) 134.
- 132 Quoted and discussed: Young, (2001) 146.
- 133 See Potts, (1996) 280.
- 134 According to catalogues consulted by Young, (2001) 147.
- 135 Views: Young, (2001) 147.
- 136 Inscription dating from mid to late 2nd century AD. Details: Sidebotham, (1986a) 95; Young, (2001) 80–1; 142; Stoneman, (1992) 45.
- 137 See OGIS 663 (AD 154–5). Zabdalas or a relative (theory tenuous).
- 138 Theories: Sidebotham, (1986a) 95–6; Young, (2001) 80–1.
- 139 Quoted and discussed: Young, (2001) 80–1.
- 140 Details: Sidebotham, (1986a) 95–6.
- 141 Details: CIS 3.3910.
- 142 Discussed: Sidebotham, (1989) 497.
- 143 See Sedov, (1996) 15.
- 144 The Chinese Weilue describes voyages around Arabia (in the era between AD 116 and AD 164). The author writes: ‘From the city of Angu (Gerrha), on the

frontier of Anxi (Parthia), you take a boat and go directly across to Haixi (Egypt). With favourable winds it takes two months'. See Weilue, 11 (account perhaps influenced by Hou Hanshu, 88.10).

- 145 See Justinian Digest, 39.4.16.7. A rock inscription from a coronation site near Shabwa in southern Arabia indicates that Palmyrenes, Indians and Babylonians were visiting the area in 235 AD (RES 2771; 3022). Discussed: Hoyland, (2001) 94.
- 146 By this era, the Nabateans were subjects of the Roman Empire. Their trade voyages into the Persian Gulf were 'Roman'. The Weilue writes: 'Da Qin (the Roman Empire) trades with Anxi (Parthia) across the middle of the sea (Indian Ocean)'. See Weilue, 12.
- 147 Discussed: Sidebotham, (1986a) 66.
- 148 See OGIS 639. Details: Sidebotham, (1986a) 95–6; (1996a) 198.
- 149 See Ibid.
- 150 Theories: Sidebotham, (2008) 191–2.
- 151 Caravan ventures resumed by c. AD 188–9 (Inv. 10.18); definitively by AD 193 (CIS 2.3948). The last securely dated caravan inscription is AD 257/8. Details: Millar, (1998) 131.
- 152 Details: Elton, (1996) 95.
- 153 Persian Royal Road: Herodotus, 5.52–4; 8.98. Parthian use: see Strabo, Geog. 16.1.16.
- 154 Ibid. 11.5.8.
- 155 Hou Hanshu, 88.12.
- 156 See Appendix A. Weilue, 12 (information dating AD 116–164).

- 157 Hou Hanshu, 88.12. Discussed: Hill, Notes to the Hou Hanshu (2003). Account possibly received from Roman merchants who visited China in AD 166. Views: Thorley, (1969) 214; Ferguson, (1978) 594.
- 158 Discussed: Young, (2001) 101; 136; Berggren & Jones, (2000) 27; Millar, (1998) 120–1.
- 159 See Isidore, 2–13. Views: Charlesworth, (1924) 102–3; Miller, (1969) 120–4; 136; Ferguson, (1978) 587.
- 160 Ptolemy, Geography 1.11.
- 161 Compare: Palmyra to Charax (over 1,000 kilometres); Dhofar to Gaza (over 3,000 kilometres).
- 162 Ptolemy, Geog. 1.11; 6.13.
- 163 Possibly midpoint between Ferghana and Kashghar. Discussed: Warmington, (1928) 23; Charlesworth, (1924) 104; Miller, (1969) 127–31; Ferguson, (1978) 594; Ball, (2000) 134.
- 164 See P.M.E. 39; 64.
- 165 See details and discussion in Kumar, (2005) 50–2.
- 166 See Pulleyblank, (1999) 71.
- 167 See Thorley, (1971) 80.
- 168 See Hou Hanshu, 88.1.

### هوامش الفصل الخامس: الاتصالات الدبلوماسية مع الشرق البعيد

- 1 Discussed: Warmington, (1928) 35–6.
- 2 Augustus, Res Gestae, 31.
- 3 Strabo, Geography. 2.5.12.

- 4 Propertius, 2.27.5 ('If we march on Parthia'); 3.5.47–8 ('War is gratifying, bring Crassus' standards home'); 3.4 ('Bring Parthian trophies to the Temple of Jupiter. Avenge the disaster of Crassus. Fulfi l Roman destiny!'); 4.3.67 ('When the land of the Parthian brood is conquered'). Discussed: Mattern, (1999) 186.
- 5 Suetonius, Augustus, 21.
- 6 Paulus Orosius, 6.21.19 (5th century AD).
- 7 See Warmington, (1928) 36. Greek legacy in northern India, see *Periplus Maris Erythraei*, 41; 47.
- 8 See Arrian, *Campaigns of Alexander*, 5.18–22; 5.24.
- 9 Strabo, *Geog.* 15.1.73.
- 10 Dio Cassius, 54.9. Discussed: Warmington, (1928) 36.
- 11 Strabo, *Geog.* 15.1.73.
- 12 Strabo, *ibid.* Dio Cassius: 'They gave Augustus a boy who, like our statues of Hermes, had no shoulders or arms'. See Dio Cassius, 54.9.
- 13 Strabo: 'The gift s included large vipers, a serpent ten cubits in length, and a river tortoise three cubits in length, and a partridge larger than a vulture'. See Strabo, *Geog.* 15.1.73.
- 14 Stories of the phoenix connected with India. See Philostratus, 3.49.
- 15 Dio Cassius, 54.9.
- 16 Strabo, *Geog.* 15.1.73.
- 17 Strabo: 'Gift s of honour were given to Caesar Augustus and an Indian sophist burnt himself up at Athens, just as Calanus had done when he made a similar spectacular display before Alexander'. Strabo, *Geog.* 15.1.4.

- 18 Rome's eastern ambitions: Horace, Odes, 1.12.53–6 (Parthia and beyond); Virgil, Georgics, 2.172 (India). Impact of imperial propaganda: Horace, Carmen Saeculare, 55–56 ('Now the Indo-Scythians and the proud Indians seek his rulings'); Propertius, 2.10.15 ('Emperor, India bows its head to your triumph'); 3.4.1 ('Our god Caesar Augustus plots war against rich India'); 2.9.29 ('What if I was a soldier to be sent to India?').
- 19 Augustus: 'I forced the Parthians to return to me the spoils and standards of three Roman armies and to seek as supplicants the friendship of the Roman people'. See Augustus, Res Gestae, 29. Impact of propaganda: Horace, Odes, 3.5.4 ('Parthians bow before his throne').
- 20 Dio Cassius, 54.9. See also: Pliny, Natural History, 8.25; Suetonius, Augustus, 43.
- 21 Details: Campbell, (1995) 6.
- 22 Strabo, Geog. 15.1.4. Discussed: Warmington, (1928) 36.
- 23 Views: Warmington, (1928) 60.
- 24 Florus, 2.34–62. Discussed: Warmington, (1928) 36.
- 25 Florus: 'Ambassadors who sought friendship included the Seres' (Florus, Roman History, 2.34.62). The soft 'ch' occurring in the name 'Chera' could have been confused with the similar sounding 'Seres'. Argument: Warmington, (1928) 37.
- 26 See Pliny, N.H. 6.26.101–2. P.M.E. 49; 56.
- 27 See Josephus, Jewish Antiquities, 19.8.2.
- 28 Details: De Romanis, (1997) 107–8.
- 29 For instance: 'The "gift s" of gold brought by the large ships . . . Kuttuvan presents to visitors, the rare products'. See Purananuru, 343.1–10.
- 30 Peutinger Map, Segment 11. A caravan inscription from Palmyra records how a wealthy businessman used his own initiative and finances to found an

Augustan temple in the Parthian city of Vologesias. See CIS 2.3917. Discussed: Elton, (1996) 94.

31 Roman merchant contact with the Saka court, see P.M.E. 49.

32 See P.M.E. 43; 52.

33 See Pliny, N.H. 6.24.84–91. Some of Pliny's information on trade voyages to India dates to this contact (AD 48–52). See N.H. 6.26.101–6. Details: De Romanis, (1997) 201.

34 Pliny, N.H. 6.24.84.

35 Sinhalese unfamiliar with denarii further suggesting that Roman coin exports to the Tamil lands was mainly in gold bullion.

36 Pliny, N.H. 6.24.84–5.

37 Ibid.

38 Mahavamsa, 11.20. Details: Weerakkody, (1997) 57–8.

39 Pliny, N.H. 6.24.85.

40 Theories: Weerakkody, (1997) 57.

41 Also see: Pliny, N.H. 32.11.

42 Bhatikabhaya ruled AD 38–66. Details: De Romanis, (1997) 192; Weerakkody, (1997) 53.

43 Details: De Romanis, (1997) 189; 201.

44 Dipavamsa, 21.13.

45 Mahavamsa, 34.47.

46 Vamsatthappakasini, 104–11 (7th to 13th century AD). Details: De Romanis, (1997) 190.

- 47 Details: De Romanis, (1997) 227–8.
- 48 See Strabo, Geog. 2.5.32. Pliny describes Sri Lanka: ‘banished by nature beyond the confines of the world’. See Pliny, N.H. 6.24.89.
- 49 Pliny: ‘the Sinhalese told us there was greater wealth in their own country than in ours’. Pliny, N.H. 6.24.89. Issues discussed: Weerakkody, (1997) 59–63; De Romanis, (1997) 201.
- 50 Discussed: Mattern, (1999) 174–5.
- 51 Theories: Richmond, (1963) 44.
- 52 Quoted and discussed: Matthews, (1984) 164.
- 53 See Pliny, N.H. 37.11.45–6.
- 54 Historia Augusta, Firmus, 3.
- 55 Historia Augusta, Aurelian, 28–9.
- 56 Tacitus, Annals, 14.25.
- 57 Ibid.
- 58 Views: Schmitthenner, (1979) 102.
- 59 A ‘counter-China’ at the western end of the known world. See Pulleyblank, (1999) 71.
- 60 Hou Hanshu, 88.11.
- 61 Hou Hanshu, 88.12.
- 62 Weilue, 11.
- 63 Pliny, N.H. 34.41. Discussed: Leslie & Gardiner, (1996) 121–4. Steel available via Indian markets. See Justinian Digest, 39.4.16.7 (‘Indian iron’).

- 64 Plutarch: 'Crassus led the army through the midst of plains that had no trees, no water, and no limit anywhere within sight . . . only billows of desert that might envelope an army' (Plutarch, Crassus, 22). An Armenian advisor quipped: 'Romans you are not in Campania now'.
- 65 Parthian steel: 'Suddenly the enemy dropped their coverings and exposed their armour. Shining helmets and breastplates, their steel weapons glittering and their horses clad in plates of bronze and steel'. (Plutarch, Crassus, 24). 'The Roman thrust attacks were done with small and feeble spears against leather and steel breastplates.' (Ibid. 25); 'The spears which the Parthians thrust into the Roman cavalry were heavy with steel, and they had the force to pierce through two men at once.' (Ibid. 27).
- 66 Plutarch: 'When urged to charge the mail-clad horsemen of the enemy, the Romans showed that their hands were pinned to their shields by the arrows and their feet nailed to the ground. They were helpless either for flight or for self-defence'. Plutarch, Crassus, 25. (Connotations of crucifixion: a criminal's death). Battle discussed: Man, (2008) 160.
- 67 Plutarch, Crassus, 25. Dio Cassius: 'The arrows hitting them from all sides, killed many men and left many others useless for battle. Men were struck in their eyes by these missiles, arrows pierced their hands and punched through their armour into their bodies'. Dio Cassius, 40.21.
- 68 See Plutarch, Crassus, 28–31; Dio Cassius, 40.25–8.
- 69 See Pliny, N.H. 6.18.47. Many of the captives from the first two Parthian wars were returned to Augustus as part of the political settlement with Phraates. Yet the Parthians were unable to repatriate all the former soldiers. A significant number had escaped east to 'remote locations' and could not be tracked. Dio reports: 'Phraates returned the standards and all the prisoners of war, except for those who had taken their own lives out of shame and those who had managed to escape detection and had hidden themselves in rural places.' Dio Cassius, 54.8. Discussed: Sampson, (2008) 183.
- 70 Ferghana and the Tarim kingdoms learned Chinese techniques for making cast-iron and steel from captured Han prisoners. Details: Yu, (1967) 167–9.

- 71 Details: Needham & Yates, (1994) 144–5; 152–3.
- 72 Details: Benjamin, (2007) 103.
- 73 See Hou Hanshu, 88.10.
- 74 See Wei-shu, 102. See Ferguson, (1978) 594.
- 75 Hill suggests that the Chinese account indicates a route south from Gandhara along the Indus into Sind and then west to Kandahar and Herat, before heading southwest to Susa and Mesene. See Hill, (2003) Appendix D.
- 76 Discussed: Raschke, (1978) 618–9.
- 77 Hou Hanshu, 88.10.
- 78 Ibid.
- 79 Hou Hanshu, 88.10. Other interpretations: Charlesworth, (1924) 108–9; Warmington, (1928) 149; Miller, (1969) 133–6; Ferguson, (1978) 594; Franck & Brownstone, (1986) 126–7; Stoneman, (1992) 44; Young, (2001) 195.
- 80 The Weilue states: ‘In early times only the maritime routes to Da Qin were discussed because we did not know there were overland routes’. Weilue, 13.
- 81 Hou Hanshu, 4.14; 88.1.
- 82 Hou Hanshu, 88.1.
- 83 Distance: 40,000 li = c. 16,000 km (c. 10,000 miles).
- 84 The Chinese text reads: ‘Meng-chi Tou-le both’. Views: Leslie & Gardiner, (1996) 149. Disagreement: Pullybank, (1999) 27.
- 85 Ptolemy, Geography, 1.11. Discussed: Leslie & Gardiner, (1996) 149.
- 86 Ptolemy: ‘From the Stone Tower to Sera, the metropolis of the Seres, is a seven-month journey or 6,3200 stadia’. Ptolemy, Geog. 1.12; 6.16 (Serica). See Millar, (1998) 136.

- 87 The Stone Tower must have been about 3,600 kilometres from the Mediterranean seaboard. See Cary, (1956) 131.
- 88 Ptolemy, Geog. 1.11. Views: Young, (2001) 195–8; 276.
- 89 See Cary, (1956) 130–2.
- 90 Dio Cassius, 48.30; 49.17; 50.13. Further details see: Cary, (1956) 132.
- 91 Strabo: ‘Phraates was so eager for friendship with Caesar Augustus that . . . he called Titius the Praefect of Syria to a conference and he gave into his care, four of his legitimate sons as hostages’. Strabo, Geog. 16.1.28. Discussed: Cary, (1956) 132. The hostages also included the grandchildren of the Parthian king.
- 92 Hou Hanshu, 4 (November, AD 100). Discussed: Leslie & Gardiner, (1996) 148.
- 93 Details: Cary, (1956) 132.
- 94 See Yu, (1967) 150.
- 95 Hou Hanshu, 88.1.
- 96 Political significance: Campbell, (1995) 6.
- 97 Dio Cassius, 68.15.
- 98 Justinian Digest, 39.4.16.7.
- 99 Views: Warmington, (1928) 95; Thorley, (1979) 189.
- 100 Kushans (Bactrians) in Alexandria: ‘they are known to be excellent at horsemanship – for they cultivate this skill for the defence of their empire and independence’. In Rome: ‘Here in your city are people . . . wearing the turbans and trousers of Persians and Bactrians’. Dio Chrysostom, 32.43; 72.3.
- 101 See Hou Hanshu, 88.13.
- 102 Josephus refers to the Kushans as the ‘Sacaе’: ‘Th at very night Vologaeses received letters revealing that a great band of Dahae and Sacae despised him

- and because he was such a long journey from home, they had sent an expedition to lay waste to Parthia. Vologaeses was forced to return immediately'. Josephus, *Jewish Antiquities*, 20.4.2. (c. AD 55).
- 103 Prasad, (1984) 150. Military strength of the Kushan nation: Hou Hanshu, 88.13.
- 104 Chinese accounts: 'Vima defeated Tianzhu (Northwest India) and installed a general to supervise and lead it. The Kushan then became extremely rich'. Hou Hanshu, 88.13.
- 105 Attock inscription (Indus region). Details: Thorley, (1979) 186.
- 106 These issues are discussed with references in Tomber, (2008) 123.
- 107 The woman dressed as an Indian princess could be Helen or Cassandra. Dio Chrysostom: 'It is said that Homer's poetry is sung even in India, where people have translated it into their own language and dialect'. Dio Chrysostom, 53.6. See also: Aelian, *Variis History*, 12.48. Discussed: Parker, (2008) 110–11.
- 108 Details: *Ibid.* 184.
- 109 Theories: Warmington, (1928) 96; Thorley, (1979) 189.
- 110 See Plutarch, *Pompey*, 70.
- 111 Views: Whittaker, (2004) 152.
- 112 Discussed: Mattern, (1999) 121–2; Campbell, (1995) 216.
- 113 Trajan's motives: Dio Cassius, 68.7; 68.17. Strabo (concerning Augustus): 'His considerations were based on the well established reports that the Arabians are very wealthy and that they sold aromatics and the most valuable gemstones for gold and silver'. See Strabo, *Geog.* 16.4.22.
- 114 Tiberius: 'Our wealth is transported to alien and hostile countries'. Tacitus, *Annals*, 3.53.

- 115 Herodian: ‘Caracalla pointed out that the Roman and the Parthian Empires were the largest in the world. If they were united by marriage then the result would be a single empire without rival’. And ‘The rest of the barbarian nations not subject to our authority could easily be reduced as they are only governed by tribes and confederacies . . . By waging war together, we could easily unite the entire inhabited world under a single authority’. Herodian, 4.10.
- 116 Ibid.
- 117 For instance: Dio Cassius, 68.29–30.
- 118 *Historia Augusta*, Hadrian, 21.
- 119 Aurelius Victor, *Roman History*, 15.4. Discussed: Ball, (2000) 400.
- 120 Views: Harmatta, (1999) 474.
- 121 Details: Warmington, (1928) 299.
- 122 Mela: ‘The Seres are . . . a race eminent for integrity’. (Mela, 3.59). Strabo: ‘Some say that the Seres live longer than 130 years’. (Strabo, *Geog.* 15.1.34).
- 123 See P.M.E. 64.
- 124 Ibid. Discussed: Casson, (1989) 239–41.
- 125 Ch’in – the name of the dynasty that unified China (221–206 BC). Details: Casson, (1989) 238. Ptolemy, *Geog.* 6.16 (Serica); 7.3 (Sinae).
- 126 The Antun group arrived between the 12th October and the 10th November, AD 166. Details: Leslie & Gardiner, (1996) 153.
- 127 The Hou Hanshu reports that the Saka: ‘came repeatedly with tribute from beyond the frontier of Jih-nan’. (Hou Hanshu, 88.15). Discussed: Leslie & Gardiner, (1996) 137; 153.
- 128 Hou Hanshu, 88.12.

- 129 Views: Hill, Notes to the Hou Hanshu (2003) for Hou Hanshu, 88.12.
- 130 Views of Hirth, (1885) 173–8. Discussed: Young, (2001) 33; Mattern, (1999) 33; Ferguson, (1978) 594; Charlesworth, (1924) 72; Warmington, (1928) 131, 394. Sceptical: Leslie & Gardiner, (1996) 176.
- 131 For instance: Mela, 3.59.
- 132 Hou Hanshu, 88.12.
- 133 See McNeill, (1976) 107.
- 134 Netunceralatan ruled from c. AD 174–196. Details: De Romanis, (1997) 104–5.
- 135 Patirruppattu, 2.7–10.
- 136 Lucian, How to write history, 31.
- 137 Ibid. Views: Mclynn, (2009) 154–5.
- 138 The Roman literary elite were sceptical about merchant reports. Many regarded merchants as social inferiors. Ptolemy: ‘Marinos did not trust merchant accounts’. See Ptolemy, 1.11.
- 139 ‘Roman Leon’ or Da Qin Lun (abbreviated to Qin Lun). The Greek name Leon appears at Coptos and sites in the Eastern Desert connected with the god Pan. See Bagnall, (2000) 24.
- 140 Yao Silian, Liang-shu, 48. Discussed: Leslie & Gardiner, (1996) 100–1.
- 141 Ibid.
- 142 Details: Sidebotham, (1986a) 50–1; (1988) 499 fn. 11.
- 143 Yao Silian, Liang-shu, 54 (events 3rd century AD). Discussed Leslie & Gardiner, (1996) 159; Yu, (1967) 175–6.
- 144 Yao Silian, Liang-shu, 54.

- 145 Details: Ray, (1994) 112; Glover, (1996b) 373; (1998) 135.
- 146 Discussed: Sidebotham, (1986a) 163; Young, (2001) 82.
- 147 *Historia Augusta*, Firmus, 3.
- 148 Details: 'Firmus laid claim to Egypt but without the imperial insignia, as though he planned to make it into a free state'. *Historia Augusta*, Aurelian, 32.
- 149 *Historia Augusta*, Firmus, 4.
- 150 Details: 'Firmus now seized the imperial power in opposition to Aurelian with the purpose of defending the remainder of Zenobia's party'. *Historia Augusta*, Firmus, 5.
- 151 *Historia Augusta*, Firmus, 3. Discussed: Sidebotham, (1989) 499.
- 152 Reports suggested that Firmus or his supporters were tortured. His Indian trophies were taken by the imperial household. See *Historia Augusta*, Firmus, 3; 5.
- 153 The account reads: 'There were Blemmyes, Axumites, Arabs from Arabia Felix, Indians, and Bactrians . . .' and 'among them there were men from Palmyra, who had survived its fall. These were the foremost men of their state and they were accompanied by Egyptians who had also rebelled'. See *Historia Augusta*, Aurelian, 33.
- 154 Significance discussed: Leslie & Gardiner, (1996) 159.
- 155 I-wen Lei-chu, 76 (year AD 281–282). Discussed: Leslie & Gardiner, (1996) 160.
- 156 The Emperors Probus (AD 276–282) and Diocletian (AD 285–305) sent agents out to 'furthest India' to try to locate the source of a valuable purple dye (see *Historia Augusta*, Aurelian, 29). Perhaps these men reached China.
- 157 Nan-fang Tsao-mu Chuang, 9 (5th year Tai-kang era AD 184/5). Views: Leslie & Gardiner, (1996) 159–60.

158 The Edict on Maximum Prices may have set unrealistically low prices for Eastern goods. Edict: a pound of Troglodytic myrrh equivalent to 1.8 grams gold (32.1.83). Pliny: a pound of Troglodytic myrrh equivalent to 4.7 grams gold (Pliny, *Natural History*, 12.35). Details: Rathbone, (2000) 47. (See also nard leaf prices: Edict, 32.1.36; N.H. 12.26).

### هوامش الفصل السادس: التأثير الاقتصادي على الإمبراطورية الرومانية

1 Dio Chrysostom, 32.36.

2 Strabo, *Geography*. 17.1.13.

3 Dio Chrysostom, 32.36.

4 This figure includes Arabian and African goods that were picked up on route to India. It also includes Far Eastern goods shipped through Indian markets. A commodity weighting at least 140 tons was removed from the Hermapollon (perhaps pepper or malabathron).

See P. Vindob. G 40822, verso. Details: Rathbone, (2000) 43; 46. The cargo figure of 500 tons has been used in other reconstructions. See Whittaker, (2004) 178 n. 53. *Periplus*: 'Ships in these ports carry full loads'. See *Periplus Maris Erythraei*, 56.

5 Strabo, *Geog.* 16.4.25; 17.1.3.

6 Pre-modern economies operated on a substantial scale. Chinese records suggest at least 4 million bolts of silk fabric were stored in the capital Luoyang (early 4th century AD). Details Lui, (1988) 70. During periods of the Tang era (AD 618–907) the Chinese were sending up to a million bolts of silk into the Uighur steppe territories per annum. Details: Lui, (2001) 169. At the beginning of the 16th century southern Asia was exporting around 10,000 tons of spice per year (including 7,000 tons of pepper). Details: Kratoska, (2001) 116–7. By 1622, Western Europe was consuming 3,500 tons of pepper per annum. Details: Attman, (1981) 31–2.

7 Details: Tomber, (2008) 76.

8 Details: Ibid. 55.

9 Discussed: Sidebotham, (2008) 172.

10 Details: Cappers, (1999) 56–7.

11 Details: Ibid. 58–9.

12 Justinian Digest, 39.4.16.7. Details: Young, (2001) 209.

13 Discussed: Elton, (1996) 85.

14 See Appendix B. Views: Groom, (1981) 154–5; Whittaker, (2004) 169.

15 Discussed: Harl, (1996) 300. See also Young, (2001) 222–3.

16 Estimates: 4 sesterces (a denarius) a day a generous ‘living wage’ for a labourer (300 denarii or 1,200 sesterces per year). Details: Mattern, (1999) 28; Alston, (1995) 105–8; Harl, (1996) 275–9.

17 Eastern goods were cheaper and more accessible in the Roman era. A Ptolemaic papyrus places a price restriction on the sale of frankincense – equivalent to 40 sesterces (per mina). Pliny indicates that frankincense sold in Roman markets at a price equivalent to 32 sesterces per mina (Pliny, N.H. 12.32.65). Papyrus details: P. Tebt. 1:35. Discussed: Bagnall, & Derow, (1981) 197.

18 Discussed: Sidebotham, (1986a) 34; Stoneman, (1992) 34; Whittaker, (2004) 172–3; Dalby, (2000) 195.

19 For instance: Apicius, 1.29 (spiced salts); 2.2.55 (pepper gravy); 3.17.110 (spiced salad dressing); 9.10.420 (peppered sardines). Discussed: Singer, (2007) 20.

20 Apicius: ‘spiced honey wine which keeps forever is given to people on a journey’ (2 pints wine, 4 ounces pepper). See Apicius, 1.2.

21 Pliny, N.H. 12.14.

22 Petronius, Satyricon, 38.

- 23 Horace, *Epistles*, 2.1.270.
- 24 Details: Rathbone, (2000) 47.
- 25 North of the *Horrea Vespasiani*, the large warehouses of Vespasian (completed: AD 81–96). See Jerome, *Chronicle*, 217th Olympiad. Eusebius, *Chronicle*, AD 354.
- 26 The Spice Warehouses were destroyed by fire in AD 192. Dio writes: ‘The fire spread to the storehouses of Egyptian and Arabian wares. From there the flames were borne aloft and reaching the palace, they consumed very extensive portions of it and nearly all the state records were destroyed’. Dio Cassius, 72.24.
- 27 Area of basilica (length: 100 meters, width: 65 meters). Details: Rickman, (1971) 104–6; Whittaker, (2004) 156.
- 28 Details grain warehouses: Hermansen, (1982) Chapter 7; 230–1. Rickman, (1971) 104–6.
- 29 Details: Veen, (1998) 101–5. Silver pepper pots modelled to resemble tiny amphora. See Warmington, (1928) 183–4; Strong, (1966) 154, 178–9.
- 30 A *castrum* at Oberaden on the Lippe River in Germany (abandoned c. 8 BC). Details: De Romanis, (1997) 100; Whittaker, (2004) 172.
- 31 See Bowman, (1994) 69.
- 32 Mark, 15.23.
- 33 For instance: Celsus, *De Medicina*, 5.18.6–7 (muscle pain); 5.25.3 (menstrual pains). Galen, *De Antidoto*, 2.10 (myrrh would healant).
- 34 For instance: Dioscurides, *De Materia Medica*, 1.24 (Indian resin remedy for toothache); 5.57 (pepper remedies). Discussed: Harris, (1993) 13.
- 35 Discussed: Singer, (2007) 20.

- 36 'Yavanapriya' and 'Yavanestha', see De Romanis, (1997) 100; Gupta, (1991) 128.
- 37 See Raft ery, (1994) 218. Ingredients in eye salves, example: Celsus, *De Medicina*, 6.6.24 (salve invented by Hermon).
- 38 Discussed: Bird, (2007) 122. Frankincense and myrrh connected to kingship and divinity. See Matthew, 2.11.
- 39 Discussed: Singer, (2007) 21.
- 40 Details: Bird, (2007) 127.
- 41 The list reads: 'bread: 4 asses; dates: 1 ass; cheese: 2 asses and incense: 1 ass'. Details: Etienne, (1992) 184–5.
- 42 See also Martial: 'That lavender and myrrh stinking of funerals, half-burned frankincense and cinnamon snatched from the midst of pyres'. Martial, *Epigrams*, 11.54. Discussed: Singer, (2007) 21.
- 43 Pliny, *N.H.* 12.41.
- 44 *Ibid.*
- 45 Discussed: Singer, (2007) 21.
- 46 Pliny, *N.H.* 12.41.
- 47 John, 19.39–40.
- 48 Mark, 14.3–9. See also Matthew, 26.6–13; John, 12.1–8; Luke, 7.36–50. Discussed: Dalby, (2000) 197.
- 49 Pliny, *N.H.* 12.26. The Hermapollon was carrying 60 boxes of Gangetic nard individually priced at 4,500 dracma per container. See P. Vindob. G 40822, verso, 2–3. Details: Rathbone, (2000) 43.
- 50 Discussed: Dalby, (2000) 196.

- 51 Pliny, N.H. 13.4.
- 52 Suetonius, *Vespasian*, 8.
- 53 Cicero referred to devious men who had: 'carefully combed hair, thick with perfumed oil'. Cicero, *Catiline*, 2.22.
- 54 Lucius Plautius Plancus (43 BC). Valerius: 'they sniffed out the secret room to which he had fled' (Valerius Maximus, 6.8.5). (Martial, 9.59). Pliny: 'The smell of his perfume was a disgrace greater than his criminal guilt'. (Pliny, N.H. 13.5)
- 55 Ovid, *Art of Love*, 3.10.
- 56 See Martial, *Epigrams*, 2.29.
- 57 Pliny: 'How could a perfume be perceptible, productive or pleasurable, when applied to that part of the body?' Pliny, N.H. 13.4. Discussed: Croom, (2000) 68; Dalby, (2000) 196.
- 58 Pliny: 'I have heard also of a person giving orders for his private bath-room to be fragranced with unguents.' Pliny, N.H. 13.4.
- 59 Pliny, N.H. 13.4.
- 60 Leptis Magna in North Africa. See Pliny, *Letters*, 2.11.23. Potter, (2002) 168.
- 61 See CIL 1.1594; CIL 10.3968.
- 62 Ovid, *The Loves*, 3.15.83–98.
- 63 Juvenal, 6.462–9. Perfume types and manufacture centres discussed in Athenaeus, *Deipnosophists*, 15.38.688.
- 64 Discussed: Singer, (2007) 20.
- 65 Pliny, N.H. 13.5.
- 66 Virgil, *Georgics*, 2.466. Nard flavoured wine: see Martial, *Epigrams*, 4.13.

67 Details: Strauss, (2007) 247.

68 Details: Roberts, (2008) 61.

69 Luke, 7.37. Unguents best preserved in alabaster containers. See Pliny, N.H. 13.3.

70 Horace, Satires, 1.2.101–3. Coan silk: an inferior form of the fabric produced from the cocoons of ‘wild’ insects on the Mediterranean island of Cos. The cocoons were chewed through by the pupa leaving damaged and weakened threads (Pliny, N.H. 11.27). Coan silk was difficult to dye and had a coarser less-appealing texture. (With Chinese silk the pupae was killed by scalding or inserting a needle into the cocoon leaving the delicate threads intact). Chinese silk drove Coan silk ‘off the market’. Details: Raschke, (1978) 623–5.

71 Discussed: Croom, (2000) 123–4.

72 In the Golden Ass Triton protects Venus from sunburn with a silk parasol (Apuleius, Golden Ass, 4.31). Parasols: Martial, Epigrams, 14.28; Ovid, Fasti, 2.209; Juvenal, 9.50 (green parasols). Discussed: Croom, (2000) 107–8.

73 Martial, Epigrams, 11.27.

74 Discussed: Dalby, (2000) 200; Stoneman, (1992) 42.

75 Pliny, N.H. 6.20; Seneca, Debates, 2.5.7. Discussed: Croom, (2000) 123–4.

76 Petronius, Satyricon, 55.

77 Seneca, De Beneficiis, 7.9.

78 Tacitus, Annals, 2.33. ‘Tiberius forbade any man to wear silk clothing’. Cassius Dio, 57.15.

79 Suetonius: ‘Caligula often made public appearances in a cloak covered with embroidery and encrusted with precious stones, a long-sleeved tunic and bracelets; or in silks which men were forbidden by law to wear’. Suetonius, Caligula, 52.

80 Pliny, N.H. 11.27.

81 Discussed: Wild, (1997) 287–98.

82 Details: Stauffer, (1996) 425–30; Young, (2001) 142.

83 Colchester Museum.

84 Multi-coloured robes and shawls that would have: ‘shone in the bright Mediterranean sunshine’. See Wilkinson, (2003) 28. Pastel colours: see Croom, (2000) 80–1.

85 Details: Salway, (1965) 25; 60–2; 228; 256.

86 Martial, Epigrams, 9.59.

87 See Pliny, N.H. 37.6.

88 Martial, Epigrams, 5.11.

89 Propertius: ‘Her garment charred against her side: The fire consumed the beryl ring from her finger’. Propertius, 4.7.18–19.

90 Pliny, N.H. 37.7. Discussed: Singer, (2007) 20.

91 Pliny, N.H. 37.8.

92 Ibid. 37.7.

93 Pliny: ‘Petronius broke the ladle to deprive the Emperor Nero of this prize for his dining table. However, the Emperor then outdid everyone by paying a million sesterces for a single bowl’. Pliny, N.H. 37.7.

94 Ibid.

95 Juvenal, 5.67–74.

96 Pliny, N.H. 37.6.

- 97 Pliny: 'Pearls the most prized of all jewels'. See Pliny, N.H. 9.54.
- 98 Horace, Satires, 1.2.80.
- 99 Pliny, N.H. 9.56.
- 100 Large supplies of Indian pearls: see Pliny, N.H. 9.54; values: 9.58.
- 101 Pliny, N.H. 9.5.6.
- 102 Ibid.
- 103 Timothy, 1.2.9–10.
- 104 Petronius, Satyricon, 55.
- 105 Seneca, De Beneficiis, 7.9.
- 106 Ovid, Cures for Love, 5.53–4.
- 107 Pliny: 'They put pearls on their feet, not just on the laces of their sandals, but all over their footwear. It is not enough to wear pearls; that they must tread upon them as well?' Pliny, N.H. 37.6.
- 108 Tacitus, Annals, 3.53.
- 109 Details: Croom, (2000) 98–105.
- 110 Discussed: Croom, (2000) 117–8; Roberts, (2008) 61.
- 111 Pliny, N.H. 9.35. Compare this to early Gallic tribute (40 million sesterces) and the revenues of Palestine (48 million sesterces). Suetonius, Julius Caesar, 25; Josephus, Jewish Antiquities, 19.352. Augustus donated 50 million sesterces worth of pearls and precious stones to the Temple of Jupiter Capitolinus. See Suetonius, Augustus, 30.
- 112 Pliny, N.H. 9.58.

- 113 Martial, Epigrams, 11.27. *Foliatum* was a popular exotic perfume that included nard and myrrh. See Pliny, N.H. 13.2.15.
- 114 Seneca, Tragedies, 1.387–91.
- 115 Apuleius, Golden Ass, 2.9.8.
- 116 See Croom, (2000) 105–6.
- 117 Details: Roberts, (2008) 61.
- 118 Tax imposed on imports of ‘Indian hair’. Justinian Digest, 39.4.16.7.
- 119 Martial, Epigrams, 14.24.
- 120 Propertius, 2.22.
- 121 Ovid, The Loves, 3.15.24–8.
- 122 Value of precious woods: Pliny, N.H. 37.58. Use discussed: Singer, (2007) 20.
- 123 Martial, Epigrams, 9.59.
- 124 Virgil, Georgics, 2.463–6.
- 125 For instance: Martial, Epigrams, 9.59. Also: 14.87–8 (furniture inlaid with shell); P.M.E. 30 (shell for small items). Discussed: Casson (1989), 101–2.
- 126 Juvenal, 7.130–1.
- 127 Discussed: Dalby, (2000) 194.
- 128 The Hermapollon carried 45 talents-weight of ivory valued at 85 talents 5,157 dracmas (around 515,000 sesterces). Th is may have been over 100 complete pairs of tusks and 17 pairs composed of fragments (total weight: c. 4 tons). P. Vindob. G 40822, verso, 4–26. Details: Rathbone, (2000) 43; 46.
- 129 Ovid, Cosmetics for Women, 1.20. Martial, Epigrams, 14.3. See also: Virgil, Georgics, 1.57.

- 130 Martial, Epigrams, 14.5 (ivory tables); 14.12 (ivory cashboxes for gold); 14.14 (gaming dice); 14.77 (ivory birdcage); 14.78 (medicine chest). See also Petronius, Satyricon, 135; Pliny, N.H. 12.2 (statues and images of gods).
- 131 Details: Strauss, (2007) 247.
- 132 Indian statuette found at a home on the Via dell'Abbondanza. There is a hole drilled partially down through the centre of the object. Details: Sidebotham, (1986a) 23; Wilkinson, (2003) 13; Butterworth & Laurence, (2005) 62.
- 133 Indian eunuchs and prostitutes a familiar sight in Rome. Views: Whittaker, (2004) 151; Dalby, (2000) 191.
- 134 See Juvenal, 5.67–74.
- 135 Justinian Digest, 39.4.16.7; P.M.E. 8; 13; 31. Pliny, N.H. 6.34. Human cargo: Roman slaves to the Saka courts (see P.M.E. 49).
- 136 Horace, Satires, 2.8.14–5. Discussed: Parker, (2008) 157.
- 137 See Pliny, N.H. 7.39 (exceptional prices); Martial, Epigrams, 3.62; 11.70 (costly slaves). Perhaps 500 dracma for an ordinary slave (Horace, Satires, 2.7.43). In Egypt female slaves sold at 1,200–1,500 dracma (= sesterces). Details: Westermann, (1955) 100–1.
- 138 Tacitus, Annals, 3.53.
- 139 See Aelian, Nature of Animals, 16.2; Martial, Epigrams, 14.73 (a parrot trained to say 'Hail Caesar!'); Statius, Silvae, 2.4 (memorial ode); Pliny, N.H. 10.58 (green parrots trained to speak Latin). Discussed: Dalby, (2000) 193.
- 140 Ovid: 'Your wings made the green of emeralds look dull and your beak was coloured as though it was stained by Tyrian purple. No bird could better mimic a human voice than you: you spoke back the words perfectly, but with a fetching lisp'. Ovid, The Loves, 2.6.21–4.
- 141 Martial: 'Th at terrible anger when the rhino lowered its head and charged forward! With its horn it threw the bull into the air as though it were a toy'.

- Martial, Spectacles, 9. Rhinos from India and East Africa see Dalby, (2000) 179.
- 142 Justinian Digest, 39.4.16.7. Indian animals depicted in a Roman mosaic: Casale at Piazza Armerina in Sicily (4th century AD).
- 143 Martial, Spectacles, 8.26.
- 144 Pliny, N.H. 32.21.
- 145 Details: Butterworth & Laurence, (2005) 62.
- 146 Tacitus, Histories, 1.20.
- 147 Xenophon of Ephesus, Ephesian Tale, book 3 ('Psammis': a wealthy merchant from India). Discussed: Whittaker, (2004) 156-7.
- 148 Dio Chrysostom, 32.40.
- 149 See inscriptions: CIS 2.1.158; CIL 10.2644; CIL 10.2935. Discussed: Sidebotham, (1986a) 93.
- 150 ILS 4334. Details: Elton, (1996) 94.
- 151 Martial, Epigrams, 7.30. Discussed: Parker, (2008) 157.
- 152 RIB 1065. The Catuvellaunian were a tribal confederacy near Londinium.
- 153 Discussed: Salway, (1965) 25; 60–2; 228; 256; Elton, (1996) 94.
- 154 Discussed: Tchernta, (1997).
- 155 Plutarch, Pompey, 73.
- 156 Details: Tchernta, (1997) 241.
- 157 Tiberian era (AD 14–37). Details: Ibid. 241–3; 147.
- 158 CIL 8.22640, 65 (late 1st century BC). Discussed: Adams, (2007) 233.

- 159 See Tchernta, (1997) 245; 247.
- 160 Eastern cargo worth 9 million sesterces (P. Vindob. G 40822, verso, 29). Tenfold return on outbound investments (Hou Hanshu, 88.12).
- 161 See Pliny, Letters, 3.19.7.
- 162 See Rufinus, *Historia Monachorum*, 16; John Moschus, *Pratum Spirituale*, 193; Palladius, *Historia Lausiaca*, 14. Discussed: Whittaker, (2004) 169–70; Jones, (1964) 870–1.
- 163 Papyrus SB 7169. A further papyrus records a trade venture where four investors each put up eight talents to charter a Mediterranean ship. P. Vindob. G 19792 (= SB 6.9571). Details: Whittaker, (2004) 169; Young, (2001) 54–5.
- 164 Philostratus, *Life of Apollonius of Tyana*, 3.24 (Mediterranean).
- 165 Grain worth 185,000 sesterces in Egypt and 400,000 sesterces in Rome. Details: Hopkins, (1983) 95; Rathbone, (2002) 211.
- 166 Egypt supplied perhaps 70,000 tons of grain to Rome per annum (equivalent to 175 ships with cargo capacities of 400 tons). Details: Hopkins, (1983) 101; Harris, (2000) 717; Rickman, (1980) 67–71; Potter & Mattingly (1999) 192–200.
- 167 See Strabo, *Geog.* 2.3.4.
- 168 Theories: Casson, (1989) 34–5; (1992) 11; Young, (2001) 55–8.
- 169 Views: Bagnall, (2000) 15.
- 170 P. Vindob. G 40822, verso, 29 (value); 6; 12 (quarter-tax). After deduction of quarter-tax: 6,936,852 sesterces. Details: Rathbone, (2000) 48.
- 171 Views: Rathbone, (2000) 43; Adams, (2007) 226–8.
- 172 P. Vindob. G 40822, verso, 29.

173 See Bagnall, (2000) BE 68–79.

174 SB 7539.

175 The Senator Pliny the Younger owned estates and finances worth 17 million sesterces. His income may have been around one million sesterces per annum. Details: Duncan-Jones, (1974) 17–32; Mattern, (1999) 123; Hopkins, (2002) 206–7.

176 Petronius, *Satyricon*, 76.

177 *Ibid.*

178 *Ibid.* Discussed: De Romanis, (1997) 120.

179 Annius Eros (CIL 10.2389). Further details: Sidebotham, (1986a) 32–3; 67; (2008) 192; Adams, (2007) 233.

180 Pliny, N.H. 6.24.84.

181 Details: De'Arms, (1981) 166.

182 Discussed: Fuks, (1951) 214; Adams, (2007) 223.

183 Josephus, *Jewish Antiquities*, 18.8.1; 205.5.20. Discussed: Sidebotham, (1986a) 85; Fuks, (1951) 215.

184 Josephus, *Jewish Antiquities*, 18.6.3.

185 Josephus, *Jewish War*, 5.8.5.

186 Josephus, *Jewish Antiquities*, 19.5.1.

187 Discussed: Sidebottom, (1986a) 84–5; 102–3.

188 Nicanor Archive. See O. Petr. 266 (AD 43); 267 (AD 43); 268 (AD 44); 271 (AD 43/44).

189 Josephus, *Jewish Antiquities*, 19.5.1. Discussed: Fuks, (1951) 214–5.

- 190 Josephus, *Jewish Antiquities*, 19.5.1. Discussed: Sidebotham, (1986a) 84–5.
- 191 Procurator Judea: Josephus, *Jewish Antiquities*, 20.5.2. Parthian war: Tacitus, *Annals*, 15.28; Civil war: Josephus, *Jewish War*, 4.10.5; Tacitus, *History*, 2.7.9; Suetonius, *Vespasian*, 6.3. Status: *Jewish War*, 5.1.6. See Fuks, (1951) 215–6; Sidebotham, (1986a) 84–5.
- 192 Pliny, N.H. 12.41.
- 193 Theories: Groom, (1981) 156–61. In Rome 50 million sesterces could buy up to 2,000 tons of low grade frankincense, or almost 560 tons of the least expensive myrrh. Modern authorities estimate that around 5,500 tons of frankincense is currently produced every year in the Yemen and Somalia (Arabia alone: 3,300 tons). It is possible that 10 times this amount is produced but undeclared. Details: Shackley, (2006) 21; 141.
- 194 Pliny, N.H. 6.26.101–2. Figures ‘suspiciously rounded’, see De Romanis, (1997) 120–2. Discussed: Stoneman, (1992) 34; Tchernia, (1997) 271; Adams, (2007) 228–30.
- 195 Details: Turner, (1989) 8–9; 62–3.
- 196 Strabo, *Geog.* 2.5.12. Trade ships increased in size. See P.M.E. 57.
- 197 Hou Hanshu, 88.12. Information probably obtained by Han court officials who questioned merchant members of the Antun delegation.
- 198 Details: Carter, (1972) 269.
- 199 See P.M.E. 56.
- 200 Details: Duncan-Jones, (1994) 33–46 esp. 45.
- 201 Details: Hopkins, (2002) 199; 210.
- 202 Pliny, N.H. 12.32.59–60.
- 203 Lucan, *Pharsalia*, 10.169–71.

- 204 Pliny, N.H. 6.20.
- 205 Weilue, 12. Discussed: Leslie & Gardiner, (1996) 72.
- 206 Pliny, N.H. 6.26.101–2.
- 207 Price Edict, 23.1.1 and 24.1.1. Discussed: Harl, (1996) 301; 467.
- 208 Huan Kuan, Yan Tie Lun (Discourses on Salt and Iron), 2.15–16. (10,000 li = c. 4,100 kilometres). Discussed: Yu, (1967) 193.
- 209 Possible Chinese interest in Roman storax perfume: see Hou Hanshu, 88.12.
- 210 Pliny, N.H. 12.54.
- 211 Details: Shackley, (2006) 144; 146.
- 212 John, 12.3–5.
- 213 A hundredweight of pepper cost 3 ducats in India and was sold in European markets at a price of 80 ducats (Details: Reid, (1994) 27). Medieval era: A kilogram of pepper cost 1–2 grams in India; 10–14 grams at Alexandria; 20–30 grams in northwest Europe (Details: Braudel, (1982) 405).
- 214 Strabo, Geog. 17.1.13.
- 215 P. Vindob. G 40822, verso, 6; 12; P.M.E. 19. Discussed: Young, (2001) 52; 57; 67; 209; Sidebotham, (1986a) 102–10; Adams, (2007) 226.
- 216 The Alexandrian Tariff might be an additional levy devised by the state to raise further income from Eastern commerce. The tax is linked to Commodus who was said to have devised new customs tariff s. See Herodian, 2.4.7. Different view: Young, (2001) 208–9.
- 217 Cicero, For Manilia, 14.
- 218 Appian, History, preface, 7.

- 219 Strabo, Geog. 2.5.8. See also: 4.5.3 (AD 21). Cost of a legion about 12 million sesterces. See Duncan-Jones, (1994) 34.
- 220 Appian, Praef. 5.
- 221 Philostratus, Life of the Sophists, 548.
- 222 Seneca: 'Caligula dined one day at a cost of 10 million sesterces. Though everybody used their ingenuity to help him, he found it difficult to spend the tribute-money from three provinces on one dinner'. Seneca, Ad Helviam matrem, 10.4. Discussed: Mattern, (1999) 136.
- 223 Batavian revolt, Germania Inferior. Tacitus, Histories, 4.74 (AD 70).
- 224 Plutarch, Pompey, 45.
- 225 Suetonius, Julius Caesar, 25.
- 226 Velleius, 2.39.
- 227 Dio Cassius, 52.6.
- 228 Dio Cassius. 52.28. Discussed: Mattern, (1999) 129.
- 229 Strabo, Geog. 2.5.12.
- 230 Ibid. 17.1.13.
- 231 Military costs alone could have totalled more than 400 million sesterces per annum. Details: Duncan-Jones, (1994) 33–46, esp. 45; Campbell, (1984) 161–9; Mattern, (1999) 127; 129; Hopkins, (2002) 199.
- 232 Tacitus, Annals, 1.11. Following severe military defeats in Germany (AD 9).
- 233 Trade increase discussed: Whittaker, (2004) 164. In this era the aristocratic elite began to consume vast quantities of exotic goods in competition for prestige and political status. See Tacitus, Annals, 3.52–5.

- 234 Suetonius, *Caligula*, 16.3. Dio gives the figure of 2,300 million sesterces (according to some reports: 3,300 million). See Dio Cassius, 59.2. Discussed: Mattern, (1999) 136.
- 235 These Eastern princes had been Nero's companions in the imperial court. These decisions were not purely 'financial' but they were enabled by imperial wealth.
- 236 See Strabo, *Geog.* 17.1.13. Sceptical: Duncan-Jones, (1994) 53, 254.
- 237 Josephus, *Jewish War*, 2.16.4. Grain supply estimates discussed: Harris, (2000) 717; Rickman, (1980) 67–71.
- 238 Revenues extracted from Palestine by Herod Agrippa (AD 41–44). Josephus: 'The revenues that Herod Agrippa received from his territories were very great, no less than 12 million drachme'. Josephus, *Jewish Antiquities*, 19.8.2. Discussed: Duncan-Jones, (1994) 254.
- 239 Sceptical: Duncan-Jones, (1994) 254; Hopkins, (2002) 210.
- 240 Details: Duncan-Jones, (1994) 33–46, esp. 45; Hopkins, (2002) 200.
- 241 Much of this revenue was derived from customs taxes. The governors of Egypt therefore had access to enormous reserves of disposable cash.
- 242 See Dio Cassius, 51.17. Discussed: Goodman, (1997) 110; Morgan, (2006) 187.
- 243 Money was the 'sinews of the civil war'. See Tacitus, *Histories*, 2.84.
- 244 Different eras represented. See Pliny, *N.H.* 33.21 (gold); 33.31 (silver). Details discussed: Wilson, (2007) 113.
- 245 It is possible that new amounts of silver entering the Roman economy were not enough to replace quantities exported in trade dealings with the distant East (in particular Arabia). Dio Chrysostom talks of silver leaving the Empire in large amounts through trade dealings with 'Indians, Iberians, Arabs and Babylonians'. See Dio Chrysostom, *On Wealth*, 79.5 (early 2nd century AD). The bullion loss may have been detrimental.

- 246 Pliny's export figure of 100 million sesterces was possibly composed of roughly equal amounts of silver and gold (Pliny, N.H. 12.41). Northern India received gold and silver Roman money (P.M.E. 38; 49). Arabians received silver (Diodorus Siculus, 19.95; Agarchides, 5.104; P.M.E. 28. Silver denarii: Pliny, N.H. 6.24.84–5); silver and gold (Strabo, Geog. 16.4.19; 16.4.22; 16.4.26; P.M.E. 24). Ethiopians received Roman silver and goldware (P.M.E. 6). East Africans received silver (P.M.E. 8–10 and gold: P.M.E. 8).
- 247 Details: Macdowell, (1991) 151.
- 248 See Pliny, N.H. 33.13.
- 249 Dio Chrysostom: 'The Indian Ocean, whose name was rarely heard in past times'. Dio Chrysostom, 32.36.
- 250 Pliny: 'It used to be customary to gather all one's ingredients at home and there was no demand for Indian pepper and the other luxuries that we now import from overseas'. Pliny, N.H. 19.19.58.
- 251 Details: Potter & Mattingly, (1999) 105–6.
- 252 For instance: P.M.E. 24; 28.
- 253 Pliny, N.H. 32.21, 23. Discussed: De Romanis, (1997) 190.
- 254 Juvenal, 5.56–65.
- 255 Pliny, N.H. 11.27.
- 256 See Pliny, N.H. 19.15.
- 257 Ibid. 12.1.
- 258 Details: Frier, (2000) 811–6.
- 259 Details: Horden & Purcell, (2000) 175–231.

- 260 Revelations: 'Th at great city, wherein all who had ships in the sea were made rich by reason of her costliness'. (Revelations, 18.19.) Aelius Aristides: 'Rome, the common trading centre of mankind and the common market for the produce of the earth' (Orations, 26.7).
- 261 Rome is personifi ed as 'Babylon' evoking the image that even Rome could one-day become a city of ruins like the grandiose but largely derelict Babylon.
- 262 Aelius Aristides, Oration, 26.11–12.
- 263 Strabo, Geog. 17.1.7. Guilds provided these ships with ballast for the return journey to Alexandria. See CIL 14.102 (2nd century AD). Discussed: Warmington, (1928) 272–3.
- 264 Alexandria needed Italian wines for trade ventures to Arabia and India.
- 265 Egyptian revenues greater than 600 million sesterces (Eastern imports worth more than 1,000 million sesterces).
- 266 Details: Harl, (1996) 117–24. Roman coins were also needed for trade exports to Arabia, Somalia and India.
- 267 The wealth of powerful estates was released back into the wider Roman economy through elite expenditure. This was important as the Roman aristocracy traditionally favoured ideas of autarky.
- 268 Roman army supplies and equipment received from market exchanges and private workshops. Discussed: Harris, (1993) 17.
- 269 Military expenditure was needed to subdue indigenous dissent as well as defend against external threats. Exploitation did occur, for instance the fi nancial events leading up to the Boudicca revolt of AD 60. See Tacitus, Annals, 14.31; Dio Cassius, 62.2.
- 270 See Dio Cassius, 74.8. The fi gure suggests that during the reign of Antoninus Pius the Roman Empire was receiving revenues that were on average more than 100 million sesterces greater than state expenses.

- 271 For instance: Nero temporarily 'liberated' Greece from the tribute taxes it paid to Rome (c. AD 67). See ILS 8794.
- 272 See details and discussion in McNeill, (1976) 128.
- 273 The Empire may have lost: 30–40 per cent of its frontier military; 30 per cent of its revenues, 25 per cent of its urban inhabitants; 14 per cent of its total population. Jerome: 'There was such a plague throughout the whole world that the Roman army was reduced almost to extinction'. Jerome, Chronicle, 236th Olympiad = AD 168.
- 274 Eutropius, 8. 12. Roman military commitment to the Parthian war was another factor in the success of the Germanic invasion.
- 275 Historia Augusta, Marcus Aurelius, 21.
- 276 Ibid. 17.
- 277 Ibid.
- 278 Ibid. 27–8.
- 279 Dio Cassius, 72.36.
- 280 Crisis discussed: Duncan-Jones, (2004) 20–52.
- 281 On his deathbed the emperor Severus advised his successors: 'Get along, pay the soldiers and disregard everyone else'. See Dio, 76.15.
- 282 Details: Mattern, (1999) 137; Duncan-Jones, (1994) 223–31.
- 283 Collapse of the Western Roman Empire. Recent views: Ward-Perkins, (2005) 40–1. Developments in Germanic society: Heather, (2005) esp. 444; 459. Bureaucratic corruption, administrative failure, civil wars: Goldsworthy, (2009).
- 284 For instance: In the reign of Nero the Roman governor of Moesia, a man named Tiberius Plautius Silvanus, halted a major European migration. He defeated

Sarmation forces and settled 100,000 'trans-Danubians' in the outer Roman provinces. He also took hostages and established treaty arrangements. This type of operation could be successfully concluded during early empire because Rome maintained a well-financed professional army. See ILS 986. Details: Mattern (1999) 162–3.

هوامش ملحق (أ) : منتجات الإمبراطورية الرومانية

1 Weilue, 12 (information AD 116-164).

هوامش ملحق (ب) : الواردات الشرقية إلى الإمبراطورية الرومانية

1 Justinian Digest, 39.4.16.7.

هوامش ملحق (ج) : أسعار السلع الشرقية

1 See Pliny 'Natural History' Book 12. Details: Groom, (1981) 154–5, Young, (2001) 222

2 This price may be a 'copyist error.' Details: Sidebotham, (1986a) 35.



## حول المصادر القديمة

*Most classical texts referenced in this study are available online, in their original language and in modern translations. The reader may also wish to consult:*

Casson, L. (1989), *The Periplus Maris Erythraei: Text with Introduction, Translation, and Commentary*. Princeton: Princeton University Press.

And for a translation of the Muziris Papyrus:

Rathbone, D. (2001), 'The 'Muziris' papyrus (SB XVIII 13167): financing Roman trade with India', in *Alexandrian Studies II in Honour of Mostafa el Abbadi*, (full details available from the British Library), pp. 39–50.

Casson, L. (1990), 'New light on maritime loans: P. Vindob. G 40822', *Zeitschrift für Papyrologie und Epigraphik*, 84, pp. 195–206.

Details about the ancient Chinese texts, including translations of crucial passages can be found in:

Hill, J. E. (2009), *Through the Jade Gate to Rome: A Study of the Silk Routes during the Later Han Dynasty 1st to 2nd Centuries CE*. Seattle: BookSurge Publishing.

Leslie, D. D. and Gardiner, K. H. J. (1996), *The Roman Empire in Chinese Sources*. Rome: Bardi.

Yu, Y. (1967), *Trade and Expansion in Han China: A Study in the Structure of Sinobarbarian Economic Relations*. Cambridge, Cambridge University Press.

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## ثبت المصطلحات

أولاً: عربي - إنجليزي

### أ

Ptolemaic contacts	الاتصالات البطلمية
archaeology	الآثار
Athens	الأثين
Arrian	الأربين
war captives	الأسرى
Red Sea navy	أسطول البحر الأحمر
Alexander the Great	الإسكندر الأكبر
Alexandria	الإسكندرية
Asia Minor	آسيا الصغرى
Roman economy	الاقتصاد الروماني
Euphrates region	إقليم أوراسيا
Gandhara region	إقليم قندهار

Aurelian emperor	الإمبراطور أوريان
Augustus emperor	الإمبراطور أوغستي
Claudius emperor	الأمبراطور كلادويس
Persian Empire	الإمبراطورية الفارسية
Han Empire	إمبراطورية الهان
grain supply	إمدادات القمة
Nabateans Italy	الأنباط إيطاليا
Ovid	أوفيد
Iran	إيران

## ب

Babylon	بابل
Parthia	باريتا
parrots pets	الببغاء
Black Sea	البحر الأسود
Caspian Sea	بحر قزوين
carpenters	البخارين
incense	البخور
bronze	برونز
Britain	بريطانيا
Ptolemaic	البطلمة
Greece	بلاد اليونان

Bengal	البنغال
Buddhism	البوذية

## ن

Tacitus	تاكيتوس
Tamils	التاميل
Tamil trade	تجارة التأميل
Arabian trade	التجارة العربية
export decline	تدهور الصادرات
Alexandria Tariff	التعرفة الإسكندرية
excavations	التنقيبات
black species	التوابل السوداء

## ث

revenues	ثروات
----------	-------

## ج

Pamir Mountains	جبال بانير
Zagros Mountains	جبل زاغروس
Arabia	الجزيرة العربية
Delos island	جزيرة ديلوس
Zanzibar Island	جزيرة زنجبار
Cyprus island	جزيرة قبرص
Juvenal	جوفيناك

Jerome

جيرمو

## ح

governor

الحاكم

pepper pots

حاويات الفلفل

Hatshepsut Egyptian Queen

حتشبسوت (ملكة مصر)

guards

الحراس

caravan guards

حراس القافلة

Socotra guard

حراس سومطرة

civil war

حرب أهلية

craft smen

الحرفيين

warfare

الحروب

Hellenic wars

الحروب الهلينية

silks

حرير

Horace

الحصن

shipwreck

حطام السفينة

animals

الحيوانات

## خ

lamps

الخراف

Bay of Bengal

خليج البنغال

Aden Gulf

خليج عدن

wines

الخمور

## د

Danube regions	الدانوب
diplomacy	الدبلوماسية
diplomacy Rome	الدبلوماسية الرومانية
religion	الدين

## ر

Rhapta settlement	الراين مستوطنة
Rhine territories	الراين منطقة
marble	الرخام
passengers	الركاب
monsoons	الرياح الموسمية

## ز

foreign visitors	الزوار الأجانب
Olive oil	زيت الزيتون
sesame oil	زيت السمسم

## س

Arabian coast	ساحل الجزيرة العربية
Russian Steppe	السهول الروسية
Parthian politics	السياسة البارثية
Sri Lanka	سيرى لانكا

## ش

Near East	الشرق الأدنى
Far Eastern	الشرق البعيد

## ص

Arabia exports	الصادرات العربية
India supplies Ethiopia	الصادرات الهندية لأثيوبيا
India supplies Arabia	الصادرات الهندية للجزيرة العربية
Bay of Bengal exports	صادرات خليج البنغال
Eastern Desert	الصحراء الشرقية
conflict Ptolemies	صراع البطالمة
conflict	صراع
conflict Nabatea	صراع المملكة النبطية
images	الصور والتماثيل
China	الصين

## ض

custom taxes	ضرائب العبور
Nabatea annexed	الضم الروماني للمملكة النبطية

## ط

silk routes	طرق الحرير
incense trail	طريق البخور

silk routes	طريق الحرير
Royal Road	الطريق الملكي
consumer demand	الطلب الاستهلاكي
ambition	طموح

## ح

ivory	العاج
carved ivory	العاج المنحوت
hostilities	العداوات
Roman military	العسكرية الرومانية
archaeology	علم الآثار

## خ

pepper	الفلفل
steel	فولاذ
Virgil	فيرجيل الأول

## ق

Qana	قنا
Germanicus general	القائد الجرمانى
bandits	القراصنة
sugar cane	قصب السكر
big cats	القطط الكبيرة
cotton	القطن

grain

القمح

caravans

القوافل

## ك

Kabul region

كابول

Book of the Dead

كتاب الموتى

Cleopatra III queen

كليوباترا الثالثة

Cleopatra VII queen

كليوباترا السابعة

Kushan

كوشان

## م

Indian community

المجتمع الهندي

conquered

المحتلة

flood tides

المد والجزر

Alexandria city

مدينة الإسكندرية

Jerusalem city

مدينة القدس

Antioch city

مدينة أنطاكية

Petra city

مدينة بتراء

Beirut city

مدينة بيروت

Damascus city

مدينة دمشق

Zeugma town

مدينة زوجما

Sinope city

مدينة سينوب

Shabwa city

مدينة شبوه

Sidon city	مدينة صيدون
Aden city	مدينة عدن
Vologesias city	مدينة فولوجزياس
Myrrh	المر
ships	المراكب(السفن)
mercenaries	المرتزقة
Italian warehouses	المستودعات الرومانية
Chinese sources	المصادر الصينية
factory workshops	المصانع
Egypt	مصر
Bab elMandeb Straits	مضيق باب المندب
Augustan temple	المعبد الأوغستي
knowledge Rome	المعرفة الرومانية
Actium battle	معركة أكتيوم
sea battle	معركة البحر
Darius king	الملك داريوس
Zenobia queen	الملكة زنوبيا
Armenia kingdom	مملكة أرمينية
Axum kingdom	مملكة أكسوم
Nabatea kingdom	المملكة النبطية
Sassanid kingdom	مملكة الساسانيين

Hadramaut kingdom	مملكة حضر موت
Homerite kingdom	مملكة حمير
Mesene kingdom	مملكة ميسان
mines	المناجم
lighthouses	المنارات
Palmyrene product	المنتجات الحضرية
medical products	المنتجات الطبية
Caucasus region	منطقة القوقاز
Bactria region	منطقة باختريا
Pontus region	منطقة بونت
Syria region	منطقة سوريا
Phoenicia region	منطقة فينقيا
Medes population	الميديين
scale commerce	ميزان التجارة
budget Roman	الميزانية الرومانية
Muziris port	ميناء موزريس

## ن

balsam plant	نبات البلسم
copper	النحاس
Christianity	النصرانية
inscriptions	التقوش

tigers	النمور
Tigris River	نهر الفرات
Nile River	نهر النيل
Oxus River	نهر جيحون
Cyrus river	نهر قبرص

### ط

Roman attack	الهجوم الروماني
Aden attack	الهجوم الروماني على عدن
diplomatic gifts	الهدايا الدبلوماسية
Hermes	هرمس
Tamil India	الهند التاميلية
Hinduism	الهندوسية
Herodotus	هيرودوت

### ظ

eastern imports	الواردات الشرقية
Arabia imports	الواردات العربية

### ي

Josephus	يوسف بن متى
Julius Caesar	يوليس قيصر
Yavanas	اليونان

## ثانياً: إنجليزي - عربي

## A

Actium battle	معركة أكتيوم
Aden attack	الهجوم الروماني على عدن
Aden city	مدينة عدن
Aden Gulf	خليج عدن
Alexander the Great	الإسكندر الأكبر
Alexandria	الإسكندرية
Alexandria city	مدينة الإسكندرية
Alexandria Tariff	التعريفة الإسكندرية
ambition	طموح
animals	الحيوانات
Antioch city	مدينة أنطاكية
Arabia	الجزيرة العربية
Arabia exports	الصادرات العربية
Arabia imports	الواردات العربية
Arabian coast	ساحل الجزيرة العربية
Arabian trade	التجارة العربية
archaeology	الآثار
archaeology	علم الآثار
Armenia kingdom	مملكة أرمينية
Arrian	الأريين

Asia Minor	آسيا الصغرى
Athens	الأثينين
Augustan temple	المعبد الأوغستي
Augustus emperor	الإمبراطور أوغستي
Aurelian emperor	الإمبراطور أوريان
Axum kingdom	مملكة أكسوم

**B**

Bab elMandeb Straits	مضيق باب المندب
Babylon	بابل
Bactria region	منطقة باختريا
balsam plant	نبات البلسم
bandits	القراصنة
Bay of Bengal	خليج البنغال
Bay of Bengal exports	صادرات خليج البنغال
Beirut city	مدينة بيروت
Bengal	البنغال
big cats	القطط الكبيرة
Black Sea	البحر الأسود
black species	التوابل السوداء
Book of the Dead	كتاب الموتى
Britain	بريطانيا
bronze	برونز

Buddhism	البوذية
budget Roman	الميزانية الرومانية
<b>C</b>	
caravan guards	حراس القافلة
caravans	القوافل
carpenters	البخارين
carved ivory	العاج المنحوت
Caspian Sea	بحر قزوين
Caucasus region	منطقة القوقاز
China	الصين
Chinese sources	المصادر الصينية
Christianity	النصرانية
civil war	حرب أهلية
Claudius emperor	الأمبراطور كلادويس
Cleopatra III queen	كليوباترا الثالثة
Cleopatra VII queen	كليوباترا السابعة
conflict	صراع
conflict Nabatea	صراع المملكة النبطية
conflict Ptolemies	صراع البطالمة
conquered	المحتلة
consumer demand	الطلب الاستهلاكي
copper	النحاس

cotton	القطن
craft smen	الحرفيين
custom taxes	ضرائب العبور
Cyprus island	جزيرة قبرص
Cyrus river	نهر قبرص

**D**

Damascus city	مدينة دمشق
Danube regions	الدانوب
Darius king	الملك داريوس
Delos island	جزيرة ديلوس
diplomacy	الدبلوماسية
diplomacy Rome	الدبلوماسية الرومانية
diplomatic gifts	الهدايا الدبلوماسية

**E**

Eastern Desert	الصحراء الشرقية
eastern imports	الواردات الشرقية
Egypt	مصر
Euphrates region	إقليم أوراسيا
excavations	التنقيبات
export decline	تدهور الصادرات

**F**

factory workshops	المصانع
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Far Eastern	الشرق البعيد
flood tides	المد والجزر
foreign visitors	الزوار الأجانب

**G**

Gandhara region	إقليم قندهار
Germanicus general	القائد الجرمانى
governor	الحاكم
grain	القمح
grain supply	إمدادات القمة
Greece	بلاد اليونان
guards	الحراس

**H**

Hadramaut kingdom	مملكة حضر موت
Han Empire	إمبراطورية الهان
Hatshepsut Egyptian Queen	حتشبسوت (ملكة مصر)
Hellenic wars	الحروب الهلينية
Hermes	هرمس
Herodotus	هيرودوت
Hinduism	الهندوسية
Homerite kingdom	مملكة حمير
Horace	الحصن
hostilities	العداوات

## I

images	الصور والتماثيل
incense	البخور
incense trail	طريق البخور
India supplies Arabia	الصادرات الهندية للجزيرة العربية
India supplies Ethiopia	الصادرات الهندية لأثيوبيا
Indian community	المجتمع الهندي
inscriptions	النقوش
Iran	إيران
Italian warehouses	المستودعات الرومانية
ivory	العاج

## J

Jerome	جيرمو
Jerusalem city	مدينة القدس
Josephus	يوسف بن متى
Julius Caesar	يوليس قيصر
Juvenal	جوفيناك

## K

Kabul region	كابول
knowledge Rome	المعرفة الرومانية
Kushan	كوشان

## L

lamps	الخرفاف
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lighthouses المنارات

## M

marble الرخام

Medes population الميديين

medical products المنتجات الطبية

mercenaries المرتزقة

Mesene kingdom مملكة ميسان

mines المناجم

monsoons الرياح الموسمية

Muziris port ميناء موزريس

Myrrh المر

## N

Nabatea annexed الضم الروماني للمملكة النبطية

Nabatea kingdom المملكة النبطية

Nabateans Italy الأنباط إيطاليا

Near East الشرق الأدنى

Nile River نهر النيل

## O

Olive oil زيت الزيتون

Ovid أوفيد

Oxus River نهر جيحون

## P

Palmyrene product المنتجات الحضرية

Pamir Mountains	جبال بانير
parrots pets	البيغاء
Parthia	باريتا
Parthian politics	السياسة البارثية
passengers	الركاب
pepper	الفلفل
pepper pots	حاويات الفلفل
Persian Empire	الإمبراطورية الفارسية
Petra city	مدينة بتراء
Phoenicia region	منطقة فينقيا
Pontus region	منطقة بونت
Ptolemaic	البطالمة
Ptolemaic contacts	الاتصالات البطلمية

## Q

Qana	قنا
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## R

Red Sea navy	أسطول البحر الأحمر
religion	الدين
revenues	ثروات
Rhapta settlement	الراين مستوطنة
Rhine territories	الراين منطقة
Roman attack	الهجوم الروماني

Roman economy	الاقتصاد الروماني
Roman military	العسكرية الرومانية
Royal Road	الطريق الملكي
Russian Steppe	السهول الروسية
<b>S</b>	
Sassanid kingdom	مملكة الساسانيين
scale commerce	ميزان التجارة
sea battle	معركة البحر
sesame oil	زيت السمسم
Shabwa city	مدينة شبوه
ships	المراكب (السفن)
shipwreck	حطام السفينة
Sidon city	مدينة صيدون
silk routes	طرق الحرير
silk routes	طريق الحرير
silks	حرير
Sinope city	مدينة سينوب
Socotra guard	حراس سومطرة
Sri Lanka	سيريلانكا
steel	فولاذ
sugar cane	قصب السكر
Syria region	منطقة سوريا

**T**

Tacitus	تاكيتوس
Tamil India	الهند التاميلية
Tamil trade	تجارة التأميل
Tamils	التاميل
tigers	النمور
Tigris River	نهر الفرات

**V**

Virgil	فيرجيل الأول
Vologesias city	مدينة فولوجزياس

**W**

war captives	الأسرى
warfare	الحروب
wines	الخمور

**Y**

Yavanas	اليونان
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**Z**

Zagros Mountains	جبل زاغروس
Zanzibar Island	جزيرة زنجيبار
Zenobia queen	الملكة زنوبيا
Zeugma town	مدينة زوجما



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