

## Moving Upcountry: Ancient Travel from Coastal Ports to Inland Harbours

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### *Abstract*

The transport of commodities from inland areas to Mediterranean harbours in Classical antiquity has attracted far less scholarly attention than the subsequent movement of materials overseas. Re-examination of the pattern of overland traffic reflected by the Pistiros inscription from Thrace provides an opportunity to reconstruct the principal outlines of such a network.

The existence of this ancient transport network is articulated by surviving distributions of coins, the residues of commercial transactions (ceramic table and storage wares, dry and wet foodstuffs), and the foundations of buildings for secure storage. The terms of the inscription confirm the identities of some of the commercial agents, echoed in the material evidence.

In 1727 a group of mathematicians, eager to welcome the young Leonhard Euler to the Academy of Sciences in St Petersburg, sent him a list of essential items that they wanted him to bring from Basel: “fifteen pounds of coffee, one pound of the best green tea, six bottles of brandy, twelve dozen fine tobacco pipes, and a few dozen packs of playing cards”. Euler was ready to oblige. The journey lasted seven weeks altogether, and Euler travelled first by boat along the Rhine, that is by the most direct route northwards; then for a distance on foot; then by post wagon across a number of different German states; and finally he boarded ship from Lübeck to St Petersburg.<sup>1</sup>

The journey could have been made in a shorter time, but there were various reasons for delay. Some of these reasons were quite practical, such as the poor conditions for travel in winter, and some were personal, including his decision to break the journey at Marburg, in order to visit the philosopher Christian Wolff. In Euler’s day, travel and transport were beginning the processes of profound transformations that ushered in the modern world; but

these did not significantly affect Euler's journey, or his means of conveyance. These issues do not really constitute what makes Euler's journey from Basel to St Petersburg an interesting one for historians of more remote periods. It is rather the shopping list of longed-for items, the assumption that Euler could accommodate these in his luggage, and the rather leisurely tempo.

The expensive, even fragile nature, of this extra luggage, and the inevitable hazards of attempting to transport these over many hundreds of kilometres, in uncertain conditions, make the whole enterprise look decidedly foolhardy. Euler was doing a relatively minor service to some chums deprived of their habitual creature comforts. The nuisance factor for him looks, to our 21st-century eyes, considerable. The journey was unfamiliar to him, and he had more important things to convey than coffee or pipes. But from Euler's perspective, these items were too expensive, or insufficiently accessible to mere mathematicians, or simply unobtainable at his destination.

Euler's journey is a useful model when considering more remote periods of time because it incorporates all the essential elements of a hazardous journey—the means of transportation, the route travelled, who and what was transported, the success of the enterprise, and the reasons why it was undertaken in the first place. When discussing ancient travel and journeys, these functionally inseparable aspects are often dissociated, leading to misconceptions and misunderstandings. The different aspects of travel need to be considered in turn, partly because they involve different sources of information, or kinds of research; but ultimately they should be reunited, once we are ready to compose plausible models of travel for the world of Classical antiquity.

In this paper I propose to look at the relationship between overland, riverine, and maritime travel, looking in particular at the ways in which significant hubs of commercial traffic linked coastal with inland centres of exchange, focusing on the east Balkan region, and, in particular, on the relationships between Thasos, Maroneia, and ancient Pistiros—an inland commercial centre in the heart of the Balkans that operated between the 5th and 1st centuries BC. This network of connections provides us with a journey plan analogous to Euler's, and with at least some of the specific contextual information that might be compared with it. Such trajectories of commercial freight can illuminate the ways in which we think about travel and transport in the world of Southern Europe and the Eastern Mediterranean prior to the installation of a Roman Empire. Recent research on Mediterranean harbours is beginning to change the ways in which we think about the infrastructure of travel and freight exchange. It is too soon to attempt any broader kind of assessment here. At the same time, the

vocabulary and nomenclature of ports, and of harbours, and of inter-regional exchange, is a subject that is just beginning to be studied in a systematic way and so only a selective approach is feasible at this stage of investigation.<sup>2</sup>

#### The comparative “efficiency” of ancient transport

The comparative efficiency or lack of it in the transport and communications systems of Classical Mediterranean civilizations has become a key topic of discussion in the study of ancient economies during the last decade and a half.<sup>3</sup> It had long been assumed that travel in Classical antiquity was difficult, expensive, slow, and generally to be avoided. The general principle that water transportation was almost always cheaper and faster than overland methods remains uncontroversial. Yet this assumption conceals some fundamental considerations regarding the bulk of regional and local traffic. By combining data from Diocletian’s *Edict on Maximum Prices* with 18th-century figures for similar freight patterns, scholarly convention (whether discussing ancient or early modern travel) has assumed that overland traffic incurred freight costs that were twenty, thirty, or even forty times greater than those incurred by sea traffic.<sup>4</sup> Yet simple numerical calculations of the gross costs of transporting bulk commodities, which extrapolate prices by multiplying the unit costs that would apply for shorter distances, take no account of the different pricing structures that become effective if and when merchants hired animals from local farmers, muleteers, and camel drivers, particularly if the desire to maximize the utility of farm animals enabled freight costs to be negotiated below rates that might otherwise apply. Data from pre-industrial Europe nevertheless suggests that the availability of cheap labour and animal traction in reality could and did act to reduce theoretical costs. There is a surprising congruity between the documentary evidence available from 18th-century Europe, when farm animals were readily available for hire outside harvest time,<sup>5</sup> and the papyrological evidence from Ptolemaic and Roman Egypt, where there also seems to have been a plentiful supply of draught animals when these were needed to transport commodities.

Papyri from Egypt provide the most useful data from the ancient Classical world linking commodities and transportation into a coherent relationship. Although the evidence does not include all the cost factors required to provide specific balance sheets for moving commodities, a number of interesting facts emerge. Landowners in Greco-Roman Egypt,

even those of some pretensions, tended to own a limited pool of animals used for traction. On the estate owned by Aurelius Appianus in the Arsinoite nome during the 3rd century, most of the animals were dispersed around the estates and their main function was agricultural. At least half the oxen, however, and all the riding donkeys, together with the horses and camels, were stationed at Arsinoe and used for more specialized functions, including the transportation of estate produce, particularly wine, for sale or for onward transportation; but presumably also for private journeys made by those living on the estate.<sup>6</sup> The archive of the estate belonging to a man called Epimachos indicates a sizeable property, but the owner had very few animals of his own. Colin Adams has argued that all farmers in Roman Egypt were preoccupied with transportation. Smallholders, who had dispersed properties, sown with different crops; and large landowners, with more ambitious needs to distribute and sell their produce, needed to use animals as efficiently and effectively as possible, so as to move crops around their properties, or to market.<sup>7</sup> If required, they hired additional beasts at harvest time, or when demand was unusually high. The reluctance to own large numbers of draught animals, whose utility was not easy to maximize, also explains why we find individuals specializing in transportation. One such individual was Nikanor, the camel owner and driver, who, together with members of his family, had commodities moved between Koptos in the Nile valley and the Red Sea ports of Myos Hormos (173 km) and Berenike (380 km).<sup>8</sup>

Many merchants or carriers nevertheless operated on a far more modest basis. *Ostraka* from Berenike record tax receipts at the customs station and include the beast of burden as well as the name of the owner and the nature of the commodities transported. These receipts indicate that many of the individual loads consisted of single animal burdens. In other words, much of the through-traffic consisted of small individual consignments, which might, of course, have been part of a larger one, whether the commodities involved foodstuffs, or high value goods, such as unguents or minerals.<sup>9</sup> A donkey could be made to carry a 100-kg weight, a mule 150–180 kg, whilst a camel could bear 230 kg or more. The speed of mules and donkeys is estimated at 24 km per day, although much would have depended on conditions. Horses could travel much faster, of course, and pull weights several times greater than those of individual pack animals when yoked (approximately 40 km per day). The lacunose evidence from antiquity can usefully be compared with more systematic accounts from pre-industrial contexts.<sup>10</sup>

Another aspect of ancient transportation that must be revised is that of traction methods. There is no reason to believe that the types of harnesses used for traction, whether in the case of oxen, horses, or other equids, put pressure on the neck and throat, tending to

suffocate the animals—a thesis propounded by Lefebvre des Noëttes in an influential book from 1931. More recent, contextualized research points to a number of different harnessing styles that exerted power laterally: the so-called “dorsal” harness, which evolved in the Near East, or an alternative design, which laid maximum pressure on the animal’s chest.<sup>11</sup> This means that there was no real technical difference between the fundamental forms of land transportation in antiquity and those of the 18th century. The continuity of harnessing and yoking techniques in Europe from antiquity to the Modern period undermines one of the principal tenets held by those historians who have been reluctant to admit the frequency and efficiency of traffic in commodities in the remote past. Most economic historians, and historians of ancient economies, have wanted to make a clear distinction between Classical antiquity on the one hand (with its social landed élite, acceptance of slavery, and alleged lack of interest in profits); and the Early Modern world on the other (distinguished by a conscious interest in calculated profits). The slow and inefficient nature of transport was another argument used to sustain the supposed structural gap between remote and recent societies. The idea that forms of animal traction were fundamentally different in Classical antiquity from the harnessing methods of the Early Modern age is one aspect at least of commercial traffic that links rather than divides the ancient Classical past from recent times.<sup>12</sup> There is no substantive evidence for a technical distinction between Classical and 18th-century transport.

What is more, the configuration of sectors within the transport business in antiquity is in fact very similar to the range of transporters in the Early Modern period, when we find a similar pattern of agency—farmers, who hired out their animals part-time; longer-term journeymen (who would take their animals in search of work), and full-time regional transport agents, who specialized in commodity transfer and were not directly involved in commodity transactions.<sup>13</sup> This suggests that there is a tendency for specialists (regardless of period) to fill a gap in the supply chain when demand for such services is high and most people are unable, or unwilling, to shoulder the risks themselves. Such a tendency appears to be independent of cultural context and seems therefore to be the result of the interplay between transport ecologies, costs, and socio-economic infrastructure. The role of independent traffickers, who were responsible exclusively for the transfer of commodities, is a key aspect of the relationship between producers and recipients, and one that has yet to be studied systematically.

Recent scholarship on overland transportation has thus focused on the ways in which transport costs could be lowered by making creative use of accessible resources. The largest and most prosperous cities of antiquity were usually located either close to a coastline or on a

major river with access to the sea. The proximity of settlements to navigable waterways made city growth possible, enabling foodstuffs and construction materials, and, concomitantly, a wide variety of other commodities to be conveyed, thereby sustaining and consolidating existing social and economic structures in the vicinity.<sup>14</sup> Investment in harbour facilities was therefore the means by which urban growth could be achieved and it also acted as a catalyst for future prosperity.<sup>15</sup>

#### Contrasting approaches to ancient trade: “connectivity” and fragile markets

Two rather different scenarios have recently evolved to explain ancient commodity dynamics. Horden and Purcell have argued energetically that “connectivity”—the abstract proximity of communities whose individual ecological deficiencies could best be alleviated by mutual exchange—was a more significant factor in economic relations than the technological constraints of ancient transport.<sup>16</sup> In this scenario, perceptions of consumer needs in one place are just as significant drivers of exchange as is the ease of conveyance. It is compatible with the optimistic picture painted by Aristeides of Smyrna:

Hellenes and barbarians may wander from their own homes to arrive at their own homes; the Cilician Gates, the narrow sandy roads to Egypt through Arabia present no terrors of mountain pass, torrents, or savages: to be the emperor's subject, to be a Roman is the talisman. Homer had said, “The earth is common to all”; it was now realised. (Aristeides of Smyrna, *Or. 26.100.*)<sup>17</sup>

Other scholars remain unconvinced, arguing that this picture of Mediterranean port cities is a theoretical, rather than demonstrable proposition.<sup>18</sup> In part these divergences of opinion reflect contrasting emphases, which point to different variables operating in relation to the movement of commodities and resources. Demand for all kinds of resources, which were intended to reinforce the personal social prestige of the élite echelons of ancient communities, as well as to enhance the public sphere, helped to maintain the dynamics of supply networks. On the other hand, commercial risks and structural weaknesses, whether of infrastructure, institutions, or predatory practice, tended to restrict such initiatives and impede the circulation of resources:

The world of the Roman trader was an uneven, rough and heterogeneous place. Imbalances, asymmetries, and bottlenecks in transport, goods, information and social institutionalisation, were a chronic feature. This made for relatively low transparency and high unpredictability. (Bang 2008, 195.)

This second scenario, which emphasizes discontinuities and dissonances, does not seem, in principle, any less reasonable than the first one. Yet it makes very different assumptions about the overall nature of exchange in antiquity. What is deemed true of commercial exchanges under the Roman Empire must be considered equally relevant to earlier periods and places. Nevertheless, many of the same remarks could also be applied to Euler's day, and perhaps Bang would not reject such a parallel, bearing in mind the chronology of his comparative Empire to the Roman, namely that of the Mughal Emperors (1526 onwards).

Our understanding of ancient overland traffic is viewed, if anything, even more pessimistically than that over water. Many of the contributors to the new *Cambridge economic history of the Graeco-Roman world* are agreed that there is good evidence for roads and overland transport in many parts of the Mediterranean and neighbouring regions, and that these connecting networks evolved over time.<sup>19</sup> The difficulty lies in extrapolating actual physical exchanges from very limited material and sometimes rather opaque epigraphic, papyrological, and material evidence. The variables are familiar—a wide variety of road conditions; grasping tax collectors; the extravagance of supra-local routes, which required overnight accommodation, with the seemingly prohibitive cost of feeding and watering pack animals; and asymmetries of information, making it difficult for merchants to secure purchases or sales in a way that would deliver profit.<sup>20</sup>

Hindsight provides us with a wealth of competing types of information, which may incline us to think that the negative effects of the kinds of variables outlined above regularly came into play on any inland journey. But transport risks were not assessed by traders and travellers in terms of systematic evidence, any more than our contemporary journeys today are predicated on published mortality statistics.<sup>21</sup> The challenges and dangers of transportation need to be balanced by such evidence as we have of activities that enhanced stability. Stability is here taken to mean the development of the socio-economic infrastructure—communication systems of a more or less permanent nature, storage facilities, agreements and legal enactments facilitating exchange, and means of exchange.

## Construction contracts at Greek sanctuaries

Construction contracts with strict stipulations for the delivery of heavy freight (dating to between the second half of the 5th and the 2nd centuries BC) show that the movement of resources between coastal and inland areas was not necessarily unpredictable. The best evidence for such contracts is accessible to us largely through the rather specialized forms of documentation used by officials at certain Greek sanctuaries to demonstrate how they had executed their duties (notably Delphi, Epidauros, Eleusis, and Delos).<sup>22</sup> Timing was not the least important aspect of such projects. The delivery of materials and the completion of projects were encouraged with bonuses, and discouraged by fines for delays. We can therefore point to projects that successfully enhanced resources in a stable environment and trace the course of such initiatives over considerable time spans. Each of the epigraphic dossiers presents a rather different picture, because each sanctuary experienced one or more periods of expansion, with active construction phases interspersed by periods of maintenance or outright contraction. Commissioning magistrates used conditional clauses in private contracts, and the mechanism of partial payments, to ensure the efficient delivery of consignments.<sup>23</sup>

Major building projects of this kind were relatively unusual, but by no means exceptional. They did nevertheless provide opportunities to experiment and develop working methods for project management and delivery that could be used in less ambitious ways elsewhere. So it is quite possible that building contracts in sanctuaries pioneered the evolution of complex projects that required the integration of many different specialists. From the late 6th century BC onwards, leading Greek sanctuaries began to construct temples using ashlar masonry, a material that required particularly exacting technical coordination, not just in terms of the on-site construction of the partially-finished blocks of stone, but of the complete project design, including the commissioning of other materials which, because of the construction techniques involved, all had to be prepared to a high specification.<sup>24</sup> Among the prominent pioneers of ashlar construction in new temple designs were two cities that could afford a level of ostentatious architecture because they drew exceptional revenues from markets and harbours—Korinth and Athens. We know just a little about construction work in half a dozen Aegean sanctuaries between the late 5th and late 2nd centuries BC because the sanctuary officials were obliged to maintain records of their activities as public servants. The

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civic centres to which such sanctuaries were often attached did not necessarily commit other public commissions to permanent record. Yet the evidence for public works is apparent in a great variety of locations around the Mediterranean and beyond, in the remains of architectural complexes, the provision of fresh water supplies, the maintenance of street paving, and the investment in sea walls. Surviving traces of such investment often belie the extended time periods that such schemes required for completion. Once installed, however, urban infrastructure, particularly where very durable materials have been used, has lasting value. This means that investment in urban facilities generated assets that continued to accrue for later generations, provided that the same physical environment continued to form the principal focus of economic and ecological energies.<sup>25</sup>

The accumulation of material assets in this form is a factor that is not discussed by the authors of the two alternative frameworks, or models, of Mediterranean exchange referred to above. Both books dwell on the dynamic but fundamentally ephemeral character of exchange and are not therefore especially interested in the long-term effects of major physical constructions.<sup>26</sup> For Horden and Purcell these factors may fall outside their avowedly ecological remit of writing “history of” rather than “history in” the Mediterranean. Yet the desire, may the need to “problematisize” the idea of the town or city,<sup>27</sup> is not incompatible with the study of stable forms of investment, whether or not these represent phenomena restricted to certain phases, if they can be seen to have contributed to significant transformations in the local environment.

### Strabo’s *emporia*

Harbours are the very stuff of ancient *periploi* and also play a significant role in the *History of the Peloponnesian War*. Yet neither the former type of gazetteer, nor Thucydides’ *History*, is especially concerned with *emporia*—commercial harbours and places of exchange—notwithstanding the fact that commerce does occasionally come into focus.<sup>28</sup> Harbours of all kinds provided anchorage for fishing boats and also might have allowed space for naval vessels. *Emporia* occupied a special place within the Mediterranean configuration of coastal and inland harbours. The status of *emporia* in the 6th and 5th centuries BC is still among the least well understood historical phenomena of this period. [Given the range of evidence already available, scholars](#) We might expect to see, [somewhere](#) in the material record, some

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tangible evidence of institutional mechanisms that could explain how known commodities were exchanged and to give [use scholars](#) some idea of whether commodity transfers were important. [Some of this evidence, both epigraphic and archaeological, will be examined in this paper.](#) The comparative significance of *emporia* is nevertheless hard to detect before Strabo's time. According to Strabo, *emporia* could be ranked in a specific way. The top-ranking locations in his day included Cordoba, Cadiz, Narbonne, Lyon, Delos, Ephesos, and Pantikapaion. (Alexandria was in a category of its own above any of these.) A second-order series of *emporia* included Arles, Aegina, Corinth, Apamea, Tanais, and Dioskourias.<sup>29</sup> Leaving aside Alexandria, which operated as an inter-continental commercial hub, as well as key transhipment centres of the Aegean such as Corinth, Aegina, and Delos, Strabo's big *emporia* are largely outside the well-known sphere of urban *poleis*. The really big commercial centres lay at the intersection of inter-regional (or inter-continental) commercial traffic. The importance of hinterlands in Strabo's scenario emphasizes the fact that there are significant dimensions of trade and exchange that require us to step back and consider a much broader framework in relation to what survives, whether in terms of historical records, or of material infrastructure. The description that Strabo gives was not intended to be a complete or scientific analysis of commercial throughput. He was not writing a technical handbook, but rather an intelligent synthesis; so what he gives his reader is a highly selective account, which omits much well-known material, focusing in many ways on the exotic and the unusual. The term *emporion* is applied descriptively, rather than according to any technical or strictly juridical definition.<sup>30</sup>

#### Case studies of movements from ports to inland locations—Thasos, Pistiros and Krastevich

Most transfers of commodities were far more mundane than the transfers of the great clearing houses of Strabo's pan-Mediterranean vision, or the temple projects at Delphi, Epidauros, Delos, and Athens. In the case of perishable supplies, the time it would take to deliver these to a remote inland location was the most significant factor in determining whether such a journey was viable. Using figures for the transport of 19th-century Anatolian grain as a yardstick, Bresson has estimated that a distance of c. 300 km represents the limit of viability for transporting perishable foodstuffs, and similar types of bulk traffic, overland.<sup>31</sup> These are not hard and fast rules, as I have already explained above. But traffic over distances further

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Or that in this article you will provide the reader with some evidence and give scholars some idea....?

than, say, 300 km, could realistically be justified only if the value of the commodities transported significantly surpassed the unavoidable multiplication in the costs of freight. Many journeys to relatively remote locations, as documented in Classical sources, involved distances far smaller than 300 km.

Variable conditions undoubtedly accounted for variations in local costs. Tracks accessible by wheeled vehicles enabled higher speeds, and therefore lower costs, than those accessible only to mules, donkeys and other pack animals. But just as regional officials in Early Modern times circumvented transport bottlenecks if the purpose was sufficiently urgent,<sup>32</sup> so could merchants or project managers in antiquity, if speed were a key factor.<sup>33</sup> Even in the early 19th century (before the advent of railways), European freight traffic on roads exceeded that on waterways by five to one, partly because so much of transportation was in fact short-haul.<sup>34</sup> It becomes easier to understand the liveliness of short-haul traffic if we consider the practicalities of owning animals. Horses, mules, donkeys, oxen, and other beasts that could in principle bear burdens were expensive to maintain unless they could be put to work regularly. Periodic deliveries within a radius that did not incur additional overnight costs (or where these could be minimized) were exactly the kinds of work that owners were also most likely to seek out. Foodstuffs, agricultural produce, and textiles were commodities that needed to be moved at regular intervals, whether to storage facilities, for further processing, or to market. A close match could thus develop between supply and demand.

How far might we conceive “short haul” journeys? Modern distances are based on contemporary, often recent roads, which have immensely speeded up the time that a journey might take. The area I want to examine covers terrain far less ambitious in scope than Euler’s excursion from Basel to St Petersburg (2,100.6 km in all). Xenophon and the survivors of the “Cyreans” spent little short of two months in south-eastern Thrace (*Xen. Anab.* 7.6.1) tramping around the triangle between Byzantium, Perinthos, and Salmydessos, on the western Black Sea coast (*Xen. Anab.* 7.1.2–7.7.57), and covered about 300 km in all.<sup>35</sup> The commercial journeys that are the centre of attention in this paper involve shorter distances. The distance between the coastal port of Abdera and Adjyska Vodentisa (identified with ancient Pistiros) is a little over 150 km as the crow flies, following the valley of the River Nestos (*Fig. 1*).<sup>36</sup> Today there is no direct road route across the Bulgarian border and the Rhodope massif into the Thracian Plain, where many of the major settlements and resources of the Odrysian realm were focused in the 5th and 4th centuries BC. Even if we make allowances for the detours that ancient roads, maximizing the advantages of the terrain,

would have entailed, these distances fall well within the parameters of Bresson's scenario. Modern perceptions of distances in this part of Southern Europe, which are shaped by political borders created in recent centuries and a general unfamiliarity with the local terrain, should not deceive us into thinking that the hinterland of the north Aegean was impenetrable.

Research within the continental interior between the River Strymon on the west and the River Hebros on the east has shown that commodities travelled regularly and systematically within this region. The clearest indicators of bulk traffic are ceramic residues. Wine amphorae from the island of Thasos are probably the most significant single tracers of this traffic and the consumers of Thasian wine can be documented from western Macedonia as far as Istros and the Danube delta in the north-east between the 5th and 2nd centuries BC. Within the more restricted zone bordered by the Strymon and the Hebros estuaries, however, amphorae are also matched by silver and copper alloy coins from Thasos (and imitations of these types, which were minted at unknown locations in the interior, whose whereabouts cannot yet be definitively determined). The coin types partly echo the physical routes into the interior but are concentrated at selected locations, which were also trans-shipment points for a variety of raw materials and manufactured products. Of particular importance as entrepôts are two sites, Adjiyska Vodenitsa, near Vetren (identified with ancient Pistiros), which lies close to the ancient banks of the River Hebros in its middle course, and Krastevich, which is further to the north-east, on the banks of the River Pyasechnik (a tributary of the Hebros (modern Maritsa)).<sup>37</sup>

Although the capillary-like patterns of ceramic residues in this part of Thrace provide solid evidence for the kind of economic action that indicates stable, long-term patterns of exchange, closer examination shows that there were periods of greater and lesser intensity. The rather diffuse nature of Thasian commercial activity suggested by the material data is consistent with the interpretation of Thasian *emporia* on the Thracian mainland presented by Christophe Pébarthe. Pébarthe reconsidered the statements made by Herodotus and Thucydides about the island's *emporia* on the mainland opposite, concluding that the commercial exchanges referred to by these authors apply particularly to revenues acquired by the Thasians from a variety of inland markets, rather than to the operation of specific, fixed physical environments of exchange.<sup>38</sup> Such an interpretation helps to explain why Thasian products and coins are so widespread, whilst signs of physical investment at inland locations are harder to identify. At the same time, the Thasians were investing heavily in their commercial harbour, re-doubling their activities on the mainland from the final decades of the 5th century BC onwards.<sup>39</sup> This is the period in which Thasian coins were copied most

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intensively by communities from the Thracian interior for exchange purposes. What is equally noticeable is the preference for some commercial partners rather than others. On the island of Thasos, the majority of non-Thasian coins are issues of Macedonian kings, alongside those of Abdera and Maroneia. The distribution of Maronian coins along the major access routes through Rhodope to the Thracian Plain is striking and seems to complement the pattern visible on Thasos.<sup>40</sup>

What the modern observer wants to know is how commodities travelled from northern Aegean ports into the Southern European hinterland. Most of the harbour locations of the north Aegean coastline that appear in ancient sources are the shelving beaches of the Chalkidic peninsula—Potidaia, Torone, Mekyberna, Akanthos. All of these were useful stopping-off points, but none were *emporia* of regional, let alone inter-regional standing. The main ports of the north Aegean today are Istanbul, Thessaloniki, and Kavala. These three modern hubs reflect historical developments that emerged later than Classical times. Byzantium began to emerge as a significant regional hub in the 4th century BC, while the commercial histories of Thessaloniki and Kavala (ancient Neapolis) took a little longer.<sup>41</sup> Neapolis was closely linked to Athens in the 5th and 4th centuries BC and was therefore not part of the configuration of sites courted by the Thasians.<sup>42</sup>

We now know more about the mountain routes that connected the Aegean coast with the Thracian Plain.<sup>43</sup> A number of routes through the foothills of southern Rhodope, from Serres (that is, along the valley of the River Strymon) and from the Drama Plain (along the banks of the River Nestos), joined a route across the west-central part of the massif towards Dospat and Borino (between the headwaters of the River Nestos and the southern tributaries of the Hebrus). Thence there were two possible routes into the Thracian Plain:  
the most likely route took particularly via the westerly valleys that would take the traveller via what is now the town of Peshtera, in the northern foothills of Rhodope, south-east of Vetren. The north-western parts of Rhodope have produced a wide range of archaeological evidence from the first half of the 1st millennium BC, indicating close connections between these upland valleys and the lowlands in the Thracian Plain below these hills.<sup>44</sup> Perhaps the single clearest indicator of the range of commercial contacts attracted to the markets at Adjyska Vodenitsa is coins. In the first decade of excavations, between 1988 and 1997, 747 coins were conserved from excavations, of which 429 were identifiable. Of these, 225 (52.4%) were Macedonian issues. The hoard of 552 coins discovered by the Czech team in 1998 during routine excavations in grid square A20, a room adjacent to the main east–west street, dramatically increased the number of Macedonian coins.<sup>45</sup> It also brought the number of

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identified coins to 981. Since 1998 the number of coins recovered from excavations has continued to increase at a steady rate.<sup>46</sup> Bearing in mind that work on cleaning and identifying the excavated coins is still in progress, the overall statistics from Adjiyska Vodenitsa stand comparison with other key urban sites in Thrace, such as Seuthopolis (1,305 coins identified), or major sites in neighbouring regions, such as Olynthos (3,817 coins).<sup>47</sup> Regal issues belonging to Thracian monarchs represent a significant minority within the range of identified coins recovered from the site. Up until 1997, 96 copper alloy and 12 silver issues had been identified, of which the majority are attributable to Kotys I (39). The range of civic mints identified so far includes Ainos, Damastion, Kardia, Kypsela, Maroneia, Mesembria Pontika, Parion, Sermyle, Thasos, and the Thracian Chersonese. In the late 5th and first half of the 4th centuries BC Thasian issues seem to have been the most important civic coins in circulation, although the majority of those recovered are imitations of the “satyr and nymph” types, not coins issued by the city of Thasos itself, but by some other authority, probably within the Thracian interior, and seem to be connected (in terms of production methods) with imitations of the Thracian Chersonese. The counterfeit coins were copper alloy and silver imitations.<sup>48</sup> A hoard of “satyr and nymph” imitations has also been recovered from excavations at Krastevich, as well as some issues from Ainos. Excavation ofat the site atof Krastevich is still in the early stages of investigation, but it is already clear that this was another transit or trans-shipment centre, to which commodities were delivered, partly by river and partly overland, probably by pack animals. The presence of a large storage building in the urban area above the River Pyasechnik, with facilities for a second storey and secure accommodation for valuable commodities, means that we must take large-scale transportation over considerable distances much more seriously than has been done in the past.<sup>49</sup> Both Adjiyska Vodenitsa and Krastevich have produced a range of evidence for public structures and amenities consistent with commercial storage and sale, as well as an accumulating variety of manufactured products including tools, weapons, and decorative items, some of which were locally produced, while others were brought in from elsewhere within the region and outside it. The importance of regional products makes clear that the traffic in manufactured goods was not simply from the Aegean ports inland, but in both directions.<sup>50</sup>

Coins of the Thracian Chersonese evidently became much more important in the flow of exchange during the second half of the 4th century, particularly in the period up to c. 330 BC. The progressive dominance of issues from south-eastern Thrace coincides with growing competition between Kotys I and a variety of civic communities in the mid-

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4th century, a competition which was joined by Philip II in 340 BC, although the ultimate winner appears to have been the city of Byzantium.<sup>51</sup>

#### The Pistiros inscription—inland *emporia*

The journeys implied in the “Pistiros” inscription from central Bulgaria<sup>52</sup> provide a useful way of considering different forms of inland transport.<sup>53</sup> The text was inscribed on a huge slab of granite, 1.64 m in height, which was discovered c. 2 km distant from the artefact-rich archaeological site at Adjiyska Vodenitsa, near Vetren, in central Bulgaria, and is likely to have been located at this centre of exchange on the banks of the River Hebros originally. It offers one of the few epigraphic references to roads across significant overland distances and to tolls on roads. The main body of the text constitutes guarantees made by the Thracian ruler of the area, a successor of Kotys I (383/2–359 BC), which include the waiving of tolls on roads (ll. 20–25) between Pistiros and Maroneia, between Maroneia and Pistiros, and between these locations and other *emporia*, one of which was named (perhaps Belana of the Prassenoii: ll. 24–25; see *Fig. 2* for full text).

The physical identification of Pistiros is thus a matter of substance for understanding the full import of this text. Scholarly opinion is divided (the range of views is well represented in the contributions to the *Dossier* on Pistiros in *BCH* 123, 1999). The divergence of views has less to do with the content of the inscription, however, than with the intellectual framework for relations of exchange. The site of Adjiyska Vodenitsa can confidently be identified as a river port on the basis of geomorphological as well as archaeological research.<sup>54</sup> The absence of any identifiable evidence contemporary with the inscription at its find spot, a late Roman *mansio*,<sup>55</sup> tends to confirm the original view of the editors of this text, namely that the stone was removed from Adjiyska Vodenitsa and re-used as building material at the late Roman road station. There is thus compelling written evidence that the excavated river port was indeed an international *emporion*, although some scholars prefer to identify it with one of the unnamed *emporia* of the inscription, rather than with the Pistiros referred to in the text. The location of an inscription was usually determined by the institution that issued it, thus with a function planned for when the decree was enacted. The inscribed text might sometimes be copied to another, named location, in the case of a decision applicable in two or more places. The incomplete nature of the Pistiros inscription means that there is some

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ambiguity about its intended location, but the discovery of the text in close proximity to a river port, whose activity coincides, in chronological terms, with that of the text, means that we can be confident that there was a close connection between the excavated site and the inscription, however we interpret the configuration of *emporia* that are referred to in it.

In view of the implications about distance in this decree, it is worth reflecting briefly on what can be determined about the status and location of Pistiros. The Greek term *emporion* refers to a place of exchange and the word is often encountered in Greek historical and forensic sources of the 5th and 4th centuries BC, with reference to formal and designated districts within cities, or within their peripheries, devoted to trade. Pistiros appears as something of an anomaly in such a context—it was a city and an *emporion*, but was evidently located far from any Mediterranean coastline. This at least is M. Herman Hansen's view.<sup>56</sup> V. Chankowski has, on the other hand, recently re-affirmed the interpretation developed by B. Bravo and A. Chankowski, which asserts that the Pistiros of the inscription is the same city as that which is referred to briefly by Herodotus: Pistyros, west of Abdera and the river Nestos, and evidently in the mainland area where the Thasians had settled at a number of locations (7.109.2).<sup>57</sup>

It is probably best to begin with those aspects of the inscription, and of the historical evidence, on which there is a measure of scholarly agreement. Ancient references to a place called Pistiros, or Pistyros (the spelling may or may not be significant), refer to a *polis*, Pistyros (Hdt. 7.109.2), and an *emporion*, Pistiros (Steph. Byz. 524.11). Etymological traditions connected with this placename are evidently heterodox.<sup>58</sup> Since the name is in any case Thracian in origin<sup>59</sup> we cannot assume that there was but one location of this name. A number of Thracian placenames are quite similar-sounding. If we take into account the intentionally derogatory pronunciation of Masteira by Demosthenes (8.44, 10.15), for rhetorical effect—when Harpokration, for instance, consciously brings the names Pistiros and Masteira together—it becomes possible to think of several locations that sounded similar, at least to a Greek-speaker.<sup>60</sup> Scholarly presentation of the surviving literary evidence cannot readily distinguish mispronunciation from free association and so etymology cannot give a convincing answer to the question of whether there was more than one place called Pistiros.

We must go back to the text of the inscription to develop what is knowable about the 4th-century *emporion* of that name. Scholars are agreed that the decree comes from the chancery of an Odrysian king or prince. This helps to put the discussion of the inscription on a more secure footing. The name of the king or prince issuing the decree is not preserved, although the prefix AM- towards the end of line 42 could be reconstructed as Amadokos, one

of Kotys' sons and the appropriate territorial successor for this region. Coins of Amadokos are among the more common native regal issues at Adjyska Vodenitsa.<sup>61</sup> In lines 26–27 we have the beginning of a set of legal ordinances introduced in the time of Kotys: “*hama / [kath]aper kai epi Kotyos*”. The decree is therefore a re-statement of terms issued in Kotys' day, with reference to commercial travellers and their rights. The citation ascribed to Kotys guarantees the personal safety and security of property (*chremata*) of merchants from Maroneia, Apollonia and Thasos, “who are in Pistiros” (ll. 32–33). The clear implication is that the people of Pistiros, the Pistirenoi, whose property rights are also guaranteed by Kotys' successor against any encroachment by outsiders (ll. 16–17), had a legal position that was different from that of the visiting merchants. They were undoubtedly subject to royal or princely legislation, whether under Kotys or under his successors. Yet the text seems to exclude them from the specific terms itemized in the decree published on this inscription. As Bravo has so eloquently put it:

il est clair que Pistiros joue un rôle essentiel dans le réseau complexe de rapports qui lie, d'un côté, le roi des Odrysées et, de l'autre côté, les Grecs des *emporia* et des cités de Maronée, de Thasos, d'Apollonia, ainsi que de la cité de Pistiros elle-même; cela étant établi, il est frappant de constater que, parmi les garanties qui ont été accordées par Kotys et que nous pouvons connaître par les l. 27-39, aucune ne concerne Pistiros directement, tandis qu'une clause concerne les citoyens de Maronée, et une autre tous ceux parmi les citoyens d'Apollonia et de Thasos qui habitent à Pistiros.<sup>62</sup>

Bravo is not being entirely fair. In lines 16–17 there is a clear admonition, against any attempt to take hostages (*homēroi*) from the Pistirenoi, the people of Pistiros. The *emporitai* do not own land, or at least not explicitly. They owned property, but evidently not land. This is a further consideration for anyone attempting to glean geographical as well as legal knowledge from the text itself. The rights of the Pistirenoi were certainly affirmed in this document, even though most of the surviving parts of the text refer principally to others, who did not share the same rights of citizenship or domicile.

The normal practice in Greek cities was evidently for civic authorities to negotiate terms of access to markets and harbours with individual communities, whose merchants would then be able to import or export goods freely, subject to the usual tax requirements unless these were specifically waived.<sup>63</sup> Alain Bresson has underscored the fact that *emporia* cannot be subjected to rigid typological characterization, because the status of commercial

communities was necessarily different from that of long-term property owners, who belonged to a well-established ([native](#)) community with strong local roots. He sees a close parallel between the Greeks of Naukratis and those Greek merchants who were resident at Pistiros:

**Commented [c11]:** Of long-term property owners, who belonged to a....?

Or, le parallèle de l'emporion de Thrace intérieure, près de Vetren, montre de la manière la plus claire comment fonctionnait un établissement de type commercial vivant en symbiose avec le monde barbare, avec des résidents et des marchands de passage sous la protection de cités tutélaires.<sup>64</sup>

Bresson is aware that the status of the Greeks at Naukratis changed (with the evolution towards *polis* status in the later 4th century) so he is less inclined to feel the need for rigid status distinctions within these *emporia*. There were Egyptians living at Naukratis; Greek traders were given legal rights to operate in the same markets.<sup>65</sup> Bresson is therefore more attuned to the dynamic nature of such meeting places than Benedetto Bravo, who, whilst providing a penetrating analysis of the politico-juridical terms of the Pistiros inscription, finds it impossible to accept the idea that there were Thracians living in the *emporion*, unless as slaves of the *emporitai*, although he concedes that some of the *emporitai* may have been Thracians, “plus ou moins hellénisés”.<sup>66</sup> If the only people who could legally operate in an *emporion* (and a trading centre specifically underwritten by the authority of the Odrysian rulers) were Greek merchants, it is hard to understand with whom they were doing business. There is no reason to believe that commercial activities were entirely monopolized by Greeks, especially in areas remote from the Aegean. Everything that I have said above about the relatively fluid nature of Thasian and Maronian influence in the east Balkan region implies that other agents, whether local, or from other originating centres of the region, played equally important roles, irrespective of ethnic affiliation.

At the time of the publication of the *Dossier* in *BCH* 123, there were still a great many uncertainties about the nature of what had been found at Adjyska Vodenitsa. Only the first volume of excavation monographs had been published, in 1996. The regional evidence presented in my own monograph, *The Odrysian kingdom of Thrace*, and a good deal of work originally published in Bulgarian had not been fully absorbed. Since then it has become clearer that there was no alternative location for an *emporion* in the vicinity.<sup>67</sup> Graffiti have amplified the demographic profile of the settlement at Adjyska Vodenitsa, Vetren, which shows that Thracian names were prominent alongside Greek and Macedonian ones.<sup>68</sup> The overall character of the settlement indicates that the nature of everyday life was strongly

shaped by native traditions, both in the style of housing, the customs associated with the butchering of animals, and cult practices.<sup>69</sup> Geomorphological investigations have shown that riverine traffic was constrained by the pattern of seasonal fluctuations in the water supply, which is likely to have limited bulk transports to those times in spring and autumn when the flow of water was sufficient but calm.<sup>70</sup>

Whether we accept the identification of this site with the named city and *emporion* Pistiros, or whether we choose to relegate it to one of the unnamed *emporia* that are also referred to in the inscription, scholars must nevertheless be much more open-minded about the international dimensions of commercial transactions. Scholarly interest has focused strongly on the politico-juridical nature of Pistiros, rather than attempting to explain the evidence of exchange patterns across the east Balkan Peninsula.

The Pistiros inscription presents us not only with evidence of a network of inland routes connecting a known series of exchange centres, but of specific regulations linking access routes with institutional practice. The rather obscure reference (ll. 25–26) to “opening and closing” (gates on roads? referring to restricted access to markets? daytime access?) presupposes a coordinated pattern of practices in different commercial centres, united by a common set of regulations at the level of regional administration. It has often been assumed that *emporia* were usually located at harbours along the sea coast, so that maritime traffic could be unloaded and transhipped inland. This is undoubtedly true of many commercial harbour towns, which evolved precisely because of such synergies. But Strabo’s *Geography* refers to many inland locations that served a similar purpose, particularly at the intersection of riverine with overland routes.<sup>71</sup> Pistiros and Krastevich find their places amongst these more distant entrepôts, which are separated from the sea but linked by river and road networks. The prominence of inland *emporia* in Strabo’s own native Asia Minor suggests that he had more nuanced things to say about inland sites that he was personally acquainted with (Komana, Pessinous, and Phrygian Apameia are all singled out as “great” *emporia*, to distinguish them from “minor”, local ones, such as Kytoron and Tavion).

It is difficult to specify the area potentially covered between the *emporia* referred to in the Pistiros inscription. A minimalist view includes a triangular space between Adjiyska Vodenitsa, Maroneia, and Thasos. The distance between the first two locations constitutes c. 190 km as the crow flies, slightly less in the direction of Thasos, sconstituting an area crossed by travellers of c. 18,000 km<sup>2</sup> in total; but this is a minimal figure. The space covered by these commercial centres could well have been at least twice that size. This gives some idea of the implications for infrastructure—the human and animal requirements for food and

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protection; the energy required to maintain routeways; and the additional resources, whether privately or publicly funded, necessary to ensure the maintenance of adequate communication between the corresponding centres.

In principle, these kinds of distances are also compatible with the putative origins of grain produced in the Thracian interior and transported to coastal locations, according to Polyainos' (7.32), and Ps. Aristotle ([Ar.] *Oec.*1351a.26). Demosthenes claimed that the revenues of King Kersebleptes, one of Kotys' successors, from *emporia* were of the order of 200 talents annually (23.110). In the 4th century BC, before the Macedonian conquest of Thrace, the volume of bulk traffic in the interior was reflected in the distribution patterns of storage amphorae, notably from Thasos, which indicate riverine access. Road traffic through or around the Rhodope, like river haulage would have been largely seasonal. The principal access routes in the region were put in place for military purposes (Thuc. 2.98),<sup>72</sup> but subsequently these formed the arterial routes, south-west along the Strymon valley in the direction of Chalkidike, southwards across the Rhodope mountains, and south-eastwards towards Byzantium and the Chersonese. The Pistiros inscription shows how local rulers provided protection to merchants and benefited from the proceeds of commerce. By waiving traffic tolls, they nevertheless accrued valuable funds from market dues. There was a mutuality of interests that kept commercial operations moving.

The evidence for traffic across mountainous terrain, as well as through it by boat, demonstrates the variety and flexibility of regional exchange patterns. The linkages with more distant parts occurred less regularly, and required a greater degree of organization and planning. Consignments that travelled across or between regions were normally directed by named suppliers to known recipients, as Bresson's analysis of the institutional mechanisms shows. The surviving evidence for directed consignments is drawn mainly from sea-borne containers, but the same organizational parameters applied to overland traffic. Demand for certain commodities was necessarily influenced by cultural factors, which were subject to fashion and social practice.<sup>73</sup> The concentration of symptoms of wealth in the Thracian Plain, in the form of mortuary chambers, funerary architecture, and tomb accessories, shows that this area was a net importer of high-value raw materials, including pigments and perfumes.<sup>74</sup>

## Conclusions

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Both the scenarios considered at the outset have a part to play in any attempt at creating a comprehensive model of ancient exchange patterns. Structured relationships embodied in formal agreements, such as the one illustrated in the Pistiros inscription, between specific communities, enabling their merchants to travel by various means across country, provided a framework for regular or periodic transports. These relationships allowed consignments to be ordered, planned, and expedited, within a known environment of trust and mutual support. Such transactions reflect the “connectivity” identified by Horden and Purcell as characteristic of ancient Mediterranean (and cognate) societies. There were discontinuities and other chaotic forces, of the kind emphasized by Moses Finley, and more recently by Bang, which created perturbations in these networks. The nature of political organization, and the degree of protection enjoyed by ordinary travellers, would have been one of the factors that pushed conditions closer to the structured forms envisaged by negotiating parties, or further towards the more chaotic, anarchic conditions of predatory environments. A traveller making a journey of some 2,000 km, such as the one undertaken by the young Euler, would have found it much more difficult to arrange in 200 BC, or even AD 200, as compared with AD 1727, because of the difficulties of ensuring safe passage across many, perhaps incompatible, regime boundaries. It is precisely because such negotiations need to be embedded in local as well as inter-regional agreements, which involve complex patterns of trust and mutual support, that journeys such as Euler’s would have been quite exceptional two thousand years earlier.

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<sup>1</sup> Du Sautoy 2003, 41; Calinger 1996, 125. Euler left Basel on 5th April 1727 and arrived in St. Petersburg on 17th May of the same year. The distance from Basel to Lübeck measures 733.6 km (455.9 miles); that between Lübeck and St Petersburg 1367 km (849.7 miles, or 738.4 nautical miles; these distances have been verified: [www.wolframalpha.com](http://www.wolframalpha.com)).

<sup>2</sup> Blackman 2008, 638–664, and his bibliographical gazetteer on pp. 664–665, for a preliminary assessment of the published evidence on the physical infrastructures of Greek and Roman harbours. Much more information is accessible in a preliminary form only (see for example <http://chronique.efa.gr/index.php/fiches/search/> for an alphabetical listing of more than 100 site reports logged by the Ephoreia of Maritime Antiquities and individual onshore field teams, detailing preliminary survey work on ports and harbours in the Aegean and Ionian seas, published since 2009 and conducted during the last decade). A database of terms for markets and exchange is in preparation (<http://marches-antiques.com/?lang=en>). Contributions to Bresson & Rouillard 1993 are discussed further below. An international research programme on ports and commercial facilities is in progress: “Entrepôts et lieux de stockage” (<http://www.entreports-anr.fr>). The first volume of papers has been published by Chankowski & Karvounis 2012.

<sup>3</sup> Laurence 1998; Horden & Purcell 2000, *passim*; Adams & Laurence 2001; Bekker-Nielsen 2004; Adams 2007; 2012, esp. 220–230; Bang 2008, 133–136, 136–150; Raepsaet 2008.

<sup>4</sup> Adams 2007, 4–16, 93–115, 136–195, 220–282, and esp. 78 and 191, with a discussion of the comparative scheme for transportation methods, based on Diocletian’s Edict of Maximum Prices, as first proposed by A.H.M. Jones; cf. Adams 2012, 222. I am grateful to Colin Adams for allowing me to see a pre-publication copy of his paper.

<sup>5</sup> “A French document even puts it with some exaggeration in 1778: ‘Transport almost all goes overland because of the difficulty of the rivers.’ It is curious to note that Dutens, in 1828 estimated that of 46 million tons of goods in circulation, 4.8 million went by water and the rest by land (30.9 in small haulage enterprises, 10.9 million in long-distance haulage): a ratio of 1 to 10. It is true that between 1800 and 1840, the number of haulage vehicles doubled.

This huge volume of road transport is partly explained by the large number of short-haul trips, for over a short distance a cart cost no more than a boat: thus in 1708, the cost of carrying grain to Paris from Orleans was the same on the king’s highway as along the Orleans canal – two modern routes. ...

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But the fundamental reason was the permanent and plentiful supply of peasant transport paid for, like all *sidelines*, at less than its true cost price.” (Braudel 1982, 350–352).

Adams’ argument about hired stock, whether for private or state purposes (Adams 2007, 103–105, 119–195) can be compared closely with Braudel’s analysis of the interplay between commercial demand and the rural supply of animals. The scale and infrastructure of the systems of transportation were, of course, very different. What is relevant for the study of ancient transportation is the principle of how supply and demand could be integrated in a flexible way. Adams 2001 discusses the scope of the papyrological evidence.

<sup>6</sup> Adams 2007, 261–262; cf. 267–268 (estate of Valerius Titanianus); the accounts date from AD 239 and AD 239–240.

<sup>7</sup> Adams 2007, 259–282.

<sup>8</sup> Adams 2007, 221–226; Sidebotham (2011, 155–156) explains the realities of the sorts of distances described by Pliny (*NH* 6.26.102–103 for the 257 Roman miles, or 380 km, from Koptos to Berenike); Adams (2012, 233–234) discusses the more specific evidence on transporters.

<sup>9</sup> Adams 2007, 226–227, 242–246.

<sup>10</sup> Cotterell & Kamminga 1990, 192–233; Raepsaet 2002, 191–202; Bresson 2007, 88–91; Adams 2007, 77–81; 2012, 221, 224, 236. Raepsaet 2008, 584–589, with comparative tables of the traction power of different yoked and pack animals, tables 23.1–23.2, 23.4.

<sup>11</sup> Lefebvre des Noettes 1931; Raepsaet 2002; 2008, 580–602; Rommelaere & Raepsaet 2004; cf. Horden & Purcell 2000, 289, 562; Andreau 2010, 37.

<sup>12</sup> Adams 2012, 224–240 with discussion.

<sup>13</sup> Braudel 1982, 352–361; cf. the discussion in Andreau 2010, 31–34, 183–184.

<sup>14</sup> Étienne 1993, 23–34, on the relationship between coastal harbours and inland *emporia*.

<sup>15</sup> Blackman 2008, esp. 641–654.

<sup>16</sup> Horden & Purcell 2000, 123–172 and Bibliographic essay, 562–571; on the importance and significance of transport methods to trade, cf. contributions to Scheidel, Morris & Saller 2007, 186–187, 278, 300–301, 308–309, 339–342, 362–384, 498–499, 508–509, 535, 570–571, 663–665, 690–691, 710–712, 734.

<sup>17</sup> Tr. Friedländer 1913; cited in Adams & Laurence 2001, 1.

<sup>18</sup> E.g. Bang 2008, 137; Wickham’s position vis à vis late Roman trade, which he confines to the more emollient but less transparent term “exchange”, is broadly sympathetic with this view (2005, 693–824, esp. 694–708).

<sup>19</sup> Scheidel, Morris & Saller 2007, 163–164, 367–368, 499, 509, 533–536, 571, 690–692; Laurence (1998) 129–48; the contributors to Adams & Laurence (2001) and Quilici (2008) look mainly at Roman roads; cf. Adams 2007, *passim*; 2012, 229–232; Pikoulas (1999; 2007) has pioneered the study of roads on the Greek mainland; cf. contributors to Korres 2009 on roads in Attica. Bekker-Nielsen (2004) and Madzarov (2009) combine research on roads of Roman and pre-Roman date.

<sup>20</sup> These arguments are given considerable prominence in Bang's monograph (2008, esp. 131–144, 202–241).

<sup>21</sup> See the competing claims of different carriers in Europe between the 15th and 18th centuries, as illustrated by Braudel 1982, 349–373.

<sup>22</sup> Feyel 2006, 495–510.

<sup>23</sup> Feyel 2006, 18–20, 358–363, 395–428, 485–510.

<sup>24</sup> Salmon 2001; Davies 1998; 2001a.

<sup>25</sup> The 25 essays edited by Chankowski and Karvonis (2012) demonstrate this point for market infrastructure.

<sup>26</sup> "Here again the bazaar, with its emphasis on the irregular, seems a useful prism through which to observe the imperial styles of consumption rather than treating them in an analytical framework derived from the emerging middle-class consumer revolution of the seventeenth, eighteenth and nineteenth centuries." (Bang 2008, 301). Cf. 302: "The collection and consumption of exotic rarities and novel products was, like Pliny's *Historia Naturalis*, a cultural manifestation of the wide reach of imperial might. As such this activity formed an important part of the self-fashioning of Roman and Mughal nobles as gentlemen and as men of power who were free of ordinary constraints". In view of the importance of exchange in both arguments, it is surprising to find that the word "harbour" does not appear in the index either of Bang 2008 or Horden & Purcell 2000. Horden and Purcell have announced a second volume, which may yet include some consideration of the stable constructs referred to here, although the topics announced suggest a different set of concerns (Horden & Purcell 2000, 4).

<sup>27</sup> Horden & Purcell 2000, 89–122.

<sup>28</sup> Shipley 2011 on Ps.-Skylax; Hansen 1997; Möller 2000; and the contributors to Bresson & Rouillard 1993 explore *emporia* (see further below on Thasos).

<sup>29</sup> Étienne 1993, 23–34, and table pp. 24–26 with a full list of references to Strabo's named *emporia*; see e.g. Strabo 3.4.9 (Cordoba); 4.1.6 and 12 (Narbonne); 4.2.1 (Burdigala); 4.3.2 (Lugdunum); 5.4.6 (Dikaiarchia); 7.4.5, 11.2.10 (Pantikapaion); 7.4.5 and 11.2.3, 11 (Tanais); 8.6.20 (Corinth); 10.5.4 (Delos); 11.2.17 (Phasis); 12.2.10 and 8.15; 14.1.24 (Ephesos); 16.1.9 (Opis); 17.1.45 (Koptos); 17.1.9, 13; 2.3.4 (Alexandria). Sherratt 1998 provides a broader chronological perspective for these developments, while Kowalski 2012 offers an exploration of literary approaches to geography, including *periplooi*.

<sup>30</sup> Rouillard 1993, 35–46.

<sup>31</sup> Bresson 2007, 89. Whether or not the net price doubled over a distance of 132 km, and quadrupled over 346 km, as the 19th-century evidence for cereal transports between Sivas (ancient Sebasteia) and Samsun on the coast seems to suggest, would have depended, as Bresson freely admits, and as I have argued above, on a number of variables.

<sup>32</sup> Braudel 1982, 352–353.

<sup>33</sup> See e.g. the probable solution, suggested by Kevin Clinton, for maximizing the speed of transportation of marble column drums from the quarries on Mount Pentelikon in Athens to the Eleusinian at Eleusis, as documented in the inscription *IG II<sup>2</sup>* 1673, which is dated to 333/332 BC. Clinton (1971, 103–105) suggested that the additional payment of 2 dr. per employee per day, in addition to the standard payment of 4 dr., was intended to encourage the hauliers to prioritize the time taken, rather than to stretch the journey out and thereby earn a higher salary; see Feyel's commentary (2006, 18–20).

<sup>34</sup> Braudel 1982, 350.

<sup>35</sup> See the map in Stronk 1995, opposite p. 250 (fig. 15); 135–282; 275 (ad Xen. *Anab.* 7.7.25, with calculation of payments for 1 and 1/3 months in Seuthes' service); Archibald 2013b.

<sup>36</sup> The distance between modern Avdira, Greece, and Septemvri, Bulgaria, is 159.5 km (99.1 miles): [www.wolframalpha.com](http://www.wolframalpha.com).

<sup>37</sup> Grandjean & Salvati 2000, 175–192 on Thasos' economy with further references; 185–192 on wine amphorae; 182–185 on the Thasian law (c. 410 BC) on the export of wine, establishing a virtual Thasian monopoly in the north Aegean (*SEG XLIX*, 1339), and associated inscriptions. On Thasian amphorae in Thrace, Tzochev 2010. The key texts for our understanding of the *emporia* of Thasos are: Hdt. 6.46.2; Thuc. 1.100.2; Ps.-Scyl. 67. These are discussed in detail by Pébarthe 1999. See further, Archibald 2013a, 258–268 with further discussion of Thasian *emporia*; ibid., 231–237 on Pistiros and Krastevich. Adjayska Vodenitsa (Pistiros) is discussed further below; for Krastevich, see M. Madjarov & D. Tancheva, *AOR* 2010 (published 2011), 189–190; 2011 (published 2012), 166–168.

<sup>38</sup> Pébarthe 1999. See the references in n. 36.

<sup>39</sup> Archontidou-Arkyri, Simossi & Empéreur 1989.

<sup>40</sup> Picard 1997 on coins from the island of Thasos; Nekhrizov & Mikov 2000 for Maronian coins in Rhodope; Chryssanthaki-Nagle 2007 on coins from Abdera.

<sup>41</sup> Archibald 2013a, 98–105 (markets in the northern Aegean), 237–255 (the rise of Byzantium).

<sup>42</sup> Hansen & Nielsen 2004, 862–864, no. 634 (L. Loukopoulos).

<sup>43</sup> Delev & Popov 2005.

<sup>44</sup> Archibald 1998, 38–39 and fig. 1.9.

<sup>45</sup> Full publication of the hoard is awaited. Preliminary references are in Bouzek & Musil 2007, 64 and pls. 18 and 60.

<sup>46</sup> Preliminary accounts of coin finds are in Taneva 2000 and 2005.

<sup>47</sup> See table 1A in de Callataÿ 2006.

<sup>48</sup> Taneva 2000, 51; 2005, 27, 29; on Thasian coins and their imitations see also the contributions of O. Picard, S. Psoma, and A. Tzamalis to Faucher et al.

<sup>49</sup> For Krastevich, see above n. 36 and Archibald 2013a, 231–237.

<sup>50</sup> For the finds from Adjiyska Vodenitsa, see *Pistiros I–IV*; *Pistiros et Thasos* 2000; and the contributions to Bouzek & Domaradzka 2005.

<sup>51</sup> Archibald 1998, 213–239; cf. also Archibald 2013a, 237–245.

<sup>52</sup> *SEG* XLIII, 486; XLVI, 872<sup>¶</sup>; XLVII, 1101; *IGBulg* V, Add. xliii–xliv; xlix, 911.

<sup>53</sup> Velkov & Domaradzka 1994; Chankowski & Domaradzka 1999; Archibald 2002b.

<sup>54</sup> Archibald 2002a and b; Chiverrell & Archibald 2009; cf. Archibald 2010.

<sup>55</sup> Chankowski, Gotzev & Nehrizov 2004–2005.

<sup>56</sup> See especially the detailed discussion of the use of this term by Mogens Herman Hansen (1997 and 2006), who persuaded the author to adopt the view that the Pistirenoi originally came from Pityros, the coastal site listed by Herodotus (7.109.2): Archibald 2004, 895. There is in fact no overriding reason to accept this congruence.

<sup>57</sup> Bravo & Chankowski 1999; Chankowski 2010, 245. The contributors to Bresson & Rouillard 1993 have considered *emporia* in depth. These studies reinforce the flexible application of this term to exchange centres in Greek and non-Greek locations (see esp. the contributions of Étienne, Rouillard, and Bresson).

<sup>58</sup> Archibald 2004, 895, no. 656.

<sup>59</sup> Lazova 1996; Yordanov 2002.

<sup>60</sup> For further discussion of the etymology, see Lazova 1996; Bošnakov 1999; Yordanov 2002; Hansen 2006; Archibald 2004, 895. A. Meineke, in his commentary on the reference in Stephanos, took the view that there must have been a single location of this name: “Bistirus et Pistirus nil nisi diversae eiusdem nominis formae sunt” (St. Byz. 171.6, 524.11 Meineke ad loc.). Bravo (in Bravo & Chankowski 1999, 283), accepting Meineke’s conclusion, believed that if there were only one location, then it would have to be the site near the Aegean coast, referred to by Herodotus. Detailed investigation of the etymology of Pistiros nevertheless reveals a considerable amount of confusion amongst ancient as well as modern commentators. Stephanos’ reference to Anaximenes (of Lampsakos: *FGrHist* 72) suggests, however, that there was a strong tradition dating back to the 4th century BC that was based on genuine local knowledge. Anaximenes wrote a Philippic history, as well as a *Hellenika* and works on Alexander the Great.

<sup>61</sup> Yourukova & Domaradzki 1990; A. Chankowski discusses the different princes named Medokos and Amadokos in Bravo & Chankowski 1999, 303–309.

<sup>62</sup> Bravo in Bravo & Chankowski 1999, 284.

<sup>63</sup> Bresson 2000c and 2000d.

<sup>64</sup> Bresson 2000b, 82.

<sup>65</sup> Bresson 2000b, 74–84, esp. 83–84; the author rejects the idea that *emporia* were a late creation and affirms that these were trading centres from the Archaic period onwards (*contra* Hansen). For a more detailed study of Naukratis, see Möller 2000.

<sup>66</sup> Bravo in Bravo & Chankowski 1999, esp. 289.

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<sup>67</sup> Chankowski, Gotzev and Nehrizov 2004–2005; Chankowski 2010. See now Hatzopoulos 2012.

<sup>68</sup> Domaradzka 2002a; 2005; 2007; Domaradzka & Domaradzki 1999.

<sup>69</sup> Archibald 1999 and 2002a on cult practices; and in general *eadem* 2002b, 2007, 2010; on butchering practices Stallibrass 2007; 2010.

<sup>70</sup> Chiverrell & Archibald 2009.

<sup>71</sup> Étienne 1993.

<sup>72</sup> See the discussion in Archibald 2006, 115–120.

<sup>73</sup> See e.g. Davies 2001b, 22–39.

<sup>74</sup> Archibald 1998, 163 and n. 25 (*alabastra* containing perfumed oil, Duvanli); 298–299 (pigments).