

Commodities and Traffic Routes: Results and Prospects Current Problems and Current Research

This short symposium has been of singular value in highlighting the major issues that historians of the Byzantine world and its geographical neighbours need to confront in their attempts to understand the ways in which goods were moved around, how those goods were produced, and what conditions determined the routes along which they travelled. In his opening presentation Prof. Koder suggested that the symposium would not be breaking new ground, insofar as the themes addressed reflected an already-existing agenda of questions raised in earlier meetings. Yet in terms of bringing together scholars dealing with different but mutually relevant topics, for example, and in respect of encouraging new inter-disciplinary questions and raising methodological issues which can only be appreciated when viewed from outside the immediate close-range analysis of particular types of source material, I would in fact suggest that the meeting has indeed broken new ground, and has facilitated a broadening and a deepening of the discussion which is of considerable importance if we are to move the debate forward and evolve new strategies to handle the sorts of issues that arose in our deliberations. Koder set out a framework for the analysis of the four categories of source (written sources, toponymy, material evidence of land use, and 'preconditions of natural spaces', that is to say, material conditions of existence) in relation to the topics considered in the symposium, as well as the parameters within which, given the limitations of these different types of evidence, we can operate. What the meeting demonstrated very clearly was that by integrating some of these approaches within a common methodological framework which reflects and respects the particularities of each type of data, we can go a good deal further in our search for answers than the limitations of each separate category of evidence might at first suggest.

The movement of goods around a pre-industrial landscape has long been a subject of interest among both economic as well as cultural historians, and in the light of the voluminous literature and sources cited by the other contributors to this volume there is no need to list even the most important recent publications in this brief concluding note. Its importance hardly needs to be explained: an understanding of the routes followed by different types of commodity tells us not only about different levels of economic relationship, about the source of particular products, about centres of production and levels of demand, but also about cultural habits, diet and nutrition, technology, administrative structures and political contacts. The study of the movement of goods and people also tells us about the nature of transportation, the communications infrastructures of associated political-economic systems, the impact of the seasons, climate, geography and a range of human factors – such as warfare or brigandage as well as coin-supply and market-structure. And finally, it can help to clarify the ways in which particular societies or cultural systems viewed themselves by showing how some activities were privileged or not, as the case may be, above others.¹ The importance of pilgrimage centres, for example, as nodal points for people and particular goods, and as points from which cultic or related sacred artefacts might in turn be distributed, has long been recognised; or the role of mints in the controlled distribution of particular exchange media.

As yet, however, we lack detailed studies of many aspects of this complex of themes. Archaeological and topological evidence for the road-system appears at first fairly complete, but evidence for the actual use of roads and tracks is lacking in many important cases. Understanding the rate and effectiveness of repairs to the older Roman road surfaces, and archaeological evidence for both road-surfacing techniques and the sources of and deployment of skilled and unskilled labour, remains sketchy. Knowledge of the rates of movement of travellers, singly or in groups, as well as of larger bodies, such as military contingents, is likewise under-

¹ See, for example, E. MALAMUT, *Sur la route des saints byzantins*. Paris 1993.

researched, although recent important contributions have assembled a good deal of data relevant to this topic;² while the evidence for the use of mules and other beasts of burden, for their carrying capacities under different historical conditions, as well as of the exact operation and location of way-stations and hostels, both private and as part of the imperial *dromos*, remains fragmentary and difficult to interpret.³ Quite apart from this, of course, are questions associated with the production, extraction, distribution and consumption of the resources necessary to the upkeep of the *dromos* and of the army, while issues of means of transportation, whether hooved or wheeled, is an area that requires much more discussion and research. To what extent was the apparent change in emphasis from wheeled to hooved transport after the fifth and sixth centuries a reality and to what extent a reflection of inadequate or incorrectly-understood evidence? To what extent was wheeled transport used in commercial as opposed to state-driven enterprises, and how far did the possibilities for wheeled transport depend upon the inherited road network and to what extent was it independent (dependent, for example, on terrain and season)?

A number of these questions were answered in the course of the symposium, some more satisfactorily than others, but nevertheless the results of the discussion often pointed clearly to appropriate new directions for research. The primary themes revolved around routes and communications and means of transport; market and other demand for basic foodstuffs as well as other goods; the types, movement and distribution of ceramics and other traded commodities; and the social-administrative framework within which all these activities actually took place across the Byzantine period, roughly from the fifth and sixth to fifteenth centuries. Key questions related to what was produced and where, and what were the market or subsistence demands which supported this; and how much was required by what magnitude of population? The issue of average and specific caloric and nutritional requirements for people and animals under different conditions, for example, was clearly of central importance, yet practice varied very greatly according to region and circumstances, even if basic minima or norms were generally observed.

Well-established approaches to each of these areas and the various subordinate questions they imply were rehearsed and presented, and in the context of the symposium as a whole it proved extremely valuable to scholars with a specific approach to their own set or sets of problems to listen to and discuss with those with a different approach to a similar subject. What became abundantly clear is that interdisciplinarity and a broader awareness of both the questions asked by other scholars as well as the methodological limitations imposed by their evidence are a *sine qua non* for further progress. This is the point at which the computer modelling of several of the key features of the medieval landscape and its resources, communications and means of transport, settlement pattern and demography became relevant, for given the complexity of the material and the multi-layered, intersecting character of both questions and data, it has to be recognised that to obtain a full picture from any single perspective is impossible, and that only through the complex modelling of these features can we hope to generate either an adequate database for an analysis of the issues at stake or a satisfactory analytical framework. But computer models cannot generate answers without an appropriate context and without the necessary data, so that research into and interrogation of the various sources, whether literary and textual or material-cultural, remains an essential, if not the essential, prerequisite. Yet computer models, as the discussion made clear, do not interpret the evidence, they offer a means of interpretation; and they must themselves be constructed in such a way as to take the nature of the evidence into account, or at least create a space for it to be inserted in a dynamic way.

² See, for example, I. CH. DIMITROUKAS, *Reisen und Verkehr im byzantinischen Reich vom Anfang des 6. Jhr. bis zur Mitte des 11. Jhr.*, I–II (*Historical Monographs* 18). Athens 1997; A. DIERKENS – J.-M. SANSTERRE, *Voyages et voyageurs à Byzance et en occident du VI^e au XI^e siècle*. Actes du colloque international organisé par la Section d'Histoire de l'Université Libre de Bruxelles en collaboration avec le Département des Sciences Historiques de l'Université de Liège (5–7 mai 1994) (*Bibliothèque de la Faculté de Philosophie et Lettres de l'Université de Liège* 278). Genève 2000.

³ See B. S. BACHRACH, *Animals and Warfare in Early Medieval Europe*, in: *L'uomo di fronte al mondo animale nell'alto Medioevo*. (*Settimane di Studio del Centro Italiano di Studi sull'alto Medioevo* 31). Spoleto 1985, 707–751; W. C. SCHNEIDER, *Animal laborans*. Das Arbeitstier und sein Einsatz im Transport und Verkehr der Spätantike und des frühen Mittelalters, in: *L'uomo di fronte al mondo animale nell'alto Medioevo* 457–578. For Byzantine evidence, J. F. HALDON, *The organisation and support of an expeditionary force: manpower and logistics in the middle Byzantine period*, in: N. OIKONOMIDES (ed.), *Byzantium at War, 9th–12th Centuries*. Athens 1998, 111–151, at 127ff.

At the same time, many of the questions we need to ask can only be answered by bringing into the picture a range of other specialisms, such as palaeoenvironmental study of landscapes, as is very evident from current projects – at Sagalassos, the Konya plain, the Gök Su region and at a number of other sites in both Anatolia and the Balkans. Integrating traditional archaeological investigation with regional surveys, landscape studies and palaeoenvironmental work, combining the results of such work with those from the analysis of texts, epigraphy, sigillography and so forth, and inputting the data thus harvested into an appropriate computer model employing GISs and related technologies, offers a radically different perspective for future research in understanding pre-modern landscapes, land-use and patterns of consumption, settlement and communications. The University of Birmingham and Princeton University are currently in the early stages of planning a regional survey based around the site of ancient and medieval Euchaita, more recently Avkat (and now renamed Bey-özü), for example, near Çorum, accompanied – it is hoped – by a detailed survey and excavation of the site itself, which served as a central place and has both regional and interregional significance. The site seems to have been occupied periodically from prehistoric, and certainly Hittite times. During the Roman period it was an insignificant rural settlement, but from the 4th c. AD evolved into an important cult centre for St Theodore the Recruit, and from the later seventh century, with the Arab conquest of the eastern Roman provinces and the retreat of the Roman – now Byzantine – frontier into Anatolia, Euchaita became an important military base behind the frontier. It remained an important provincial centre until its conquest at the time of the Seljuk occupation of eastern Asia Minor in the later 11th century. Thereafter its importance dwindled, and through much of the Ottoman period it was abandoned, the only habitation being the village below the acropolis or fortress. The district itself remained economically important and the history of the several villages in the region can be traced through the Ottoman archival documents right up to the nineteenth century. This project offers the opportunity to trace the history of a single region across a period of more than two millennia, showing the effects of human activity in transforming the landscape, tracking shifting settlement and demographic patterns, and explaining transformations in land-use, agricultural and pastoral farming and urban-rural relationships.

The advantages of studying this site lie in four areas. First, unlike nearly all excavated or surveyed urban or fortified centres of the Hellenistic, Roman and Byzantine periods – 6th – 11th centuries – Euchaita was never a major metropolis, cultural centre or extensive urban site. In contrast, it was a small, if at times strategically significant, provincial town, something of a backwater for much of its history. In this respect, therefore, it is much more typical of the ‘average’ urban or fortified centre of Asia Minor, yet we know almost nothing about such sites because none has yet been excavated with a view to following such long-term changes. Archaeologists have concentrated, for a range of reasons, on major ports and cities whose history is relatively well-known at least in their broad outlines – Ephesos, Amastris, Pergamon, Ankara, Amorion – whereas sites such as Euchaita, which are no longer occupied and thus offer superb possibilities for excavation, have been ignored. A full survey of the site and its wider environs is possible, therefore, with minimal disturbance to local populations and minimal complications from later settlement. It offers a unique opportunity to research a small fortress and dependent urban settlement, a typical site, which formed an important element in the network of urban centres of the Hellenistic and Roman worlds, a significant part of the defences along the eastern frontier of the Byzantine empire in the medieval period, one which represented the ‘norm’ of provincial fortified sites; as well as a typical rural province within the Ottoman empire right up to the 20th century. It also offers an outstanding opportunity to establish an environmental and landscape history of the region and relate this directly to the pattern of human activity across several millennia. The development of computer technologies that permit the manipulation and visualisation of complex, spatially referenced geographic and mathematical data in complex situations makes a much more detailed and functionally-useful account of the survey area possible. GISs, virtual reality modelling and a variety of visual technologies are at the forefront of this development, and make the complex modelling of the effects of behaviour on landscapes and the environment an attainable target. And its role as a military base, situated as it was on an important military road in Byzantine times, together with the opportunity to conduct a detailed paleoenvironmental survey of the region around it, to reconstruct its medieval landscape, and to relate the archaeological and palynological (pollen analysis) evidence for land-use and food-production during the ancient, medieval and early modern periods, makes it a perfect focus for the detailed surveys of specific catchment areas which this symposium suggests are now required. A workshop held in May 2006 at Princeton University set out the planned project in detail, which will also entail close co-operation with the *TIB* team dealing with the area.

The discussion suggested that multi-disciplinary projects which could integrate many different types of material and approach under a single broadly-defined set of aims were undoubtedly the way forward, although it was clear that, given funding constraints as well as the nature of academic institutions, projects which were able to serve as ‘umbrella’ structures and would facilitate both the exchange of information across a series of independent projects as well as the inception of their own specific and targeted research plans would stand most chance of success in the medium to long term. One such undertaking is represented by the University of Birmingham/Princeton University ‘Medieval Logistics Project’, under the direction of Vince Gaffney and myself. In many respects, this project, which has so far generated an extremely useful workshop and produced one volume of papers,⁴ sets out to deal with many of the questions raised in this symposium, as Koder pointed out in his opening paper. The project is establishing a framework and methodology for the analysis of logistical data (i.e. pertaining to movement and communications; production, allocation, consumption of resources; settlement patterns) from pre-modern societies (chiefly in the Middle East/East Mediterranean region across to western Europe) by bringing together the expertise of archaeologists, landscape survey specialists and historians with that of specialists in human and animal nutrition and physiology, land-use and geography, especially settlement and demography. The intention is, on the basis of available computer-modelling systems, to evolve a methodology and models aimed specifically at the processing of historical data regarding the physical environment. It will offer a scientific basis, grounded in empirically-verifiable data, upon which to found interpretations of the effects of the physical environment on these aspects of human social and economic life. Its wider implications and relevance internationally for the study of all pre-modern societies in their physical context are considerable.

Understanding the generation, extraction, allocation and distribution of resources in manpower, animals and foods is fundamental to understanding how social-economic and political systems function, yet we know relatively little of these facets of pre-modern societies because of the lack of an appropriate model or models for integrating the very varied types of data necessary to understanding them. This project proposes – on the basis of work already begun – to address these issues directly, by examining three levels at which logistics need to be understood: their physical basis, historically varied organisational structures evolved to meet logistical demands, and social-organisational responses to warfare and the need to organise for it.

The project thus seeks to establish the material – physical – base for the study of these themes across the regions concerned, and the priority has been so far to establish appropriate methods for modelling ancient and medieval data onto landscapes derived from GIS and satellite-generated information. The textual and archaeological evidence from the medieval societies in question – medieval western Europe, Byzantium and the Islamic world, up to the early thirteenth century – provides a rich source of comparative data which can be exploited, for the first time, within a rigorously determined scientific framework to generate information about some of the most fundamental aspects of the workings of pre-industrial social and economic systems. But though the project deals ostensibly with logistics in the military sense, in practice it addresses a far wider set of questions. Resource allocation, the movement of large or small groups of people and animals, and the relationship between the productive capacity of the land and the size of the human and animal population it can support in the late ancient and medieval periods, are its the prime focus. It also has particular emphasis on the military aspect, chiefly because a great deal of medieval and ancient evidence focuses on military affairs and offers the opportunity to relate textual evidence to landscapes in a way which is not so apparent in other areas – demographic studies, for example, or research into agricultural outputs and so forth. The significance of ‘logistics’ is historically very broad, of course: matters broadly ‘logistical’ have always played a crucial and determining role in the outcomes of conflicts, in the political structuring of elites and their dependents, and in the relationships pertaining between political formations of different sizes and with different demographic and resource bases. The military aspect offers a particularly appropriate, yet limited field for analysis, since the (often highly tendentious and inconsistent) evidence from written and other types of documentary source for armies, their size and movement, can be used as a falsifiable data set against the ‘scientific’ data generated by the evidence of geography, terrain, land use potential, nutritional and physical constraints on human activity, and so forth. The results of work which the project intends to carry out will offer substantial benefits to the

⁴ See J. F. HALDON (ed.), *General issues in the study of medieval logistics: sources, problems and methodologies*. Leiden 2005.

study of resource allocation and distribution in historical societies in general as well as to the ways in which we are able effectively to evaluate the data the sources offer.

Such projects cannot function, however, without appropriate historical data and, more importantly, without relevant, historically-specific information about landscapes and settlements. In this respect it is impossible not to mention one of the single, perhaps the single most important project in Byzantine Studies – but with far wider implications – namely the *Tabula Imperii Byzantini*. The *TIB* represents an exemplary model of an effective, dedicated team project, made up of specialists in the fields of Byzantine history and archaeology, on the one hand, and cartographers and landscape analysts, on the other, and in many respects it would not be possible to have this meeting, nor to launch the projects described above, were it not for the ground-breaking work and superb publications, including detailed maps and careful analysis of all the available historical and archaeological data, which the *TIB* offers. It is fitting that this symposium, which has raised so many important issues and suggested so many ways forward, should be held here, in the home of the *TIB*.

In sum, the symposium demonstrated two major points. First, it demonstrated very clearly that multi-disciplinary team-based work is almost certainly the best way to deal with the great majority of the issues with which we are concerned, simply because the range of specialisms required fully to integrate all the different types of evidence into an analysis of the movement of goods and people will generally be beyond the range of any individual. This does not preclude the essential character of individual research into specific topics, especially in respect of the analysis of literary sources, for example – the majority of the papers presented at this meeting demonstrated precisely the crucial importance of such work – merely that the full value of individual research can best be appreciated in a larger team environment. Second, it showed that the integration of evidence derived from historical sources and archaeology, landscape survey and related activities with data management systems and in particular through geographical information systems, through computer modelling, for example, is going to be an increasingly important, indeed essential, aspect of such projects, given the disparity in type and function of the available evidence. The study of commodities, traffic routes and transport, and all the related fields which directly impinge upon this – land-use, settlement history and demography, to name but three – is an exciting and dynamic field, and this symposium gave an important stimulus to further research and the framing of further questions.

