CYRENAICA AND THE LATE ANTIQUE ECONOMY

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Approaches to the Economy of Late Antiquity

I welcome Richard Alston's call for new work on the development of a coherent theoretical approach to the study of the economy of late antiquity. The subject has received relatively little attention in comparison with the study of the Roman economy of the late Republic and early Empire; and even for the Roman period there is little consensus on the nature of the economy—primitivism is out of favour, but no coherent vision has yet replaced it. Questions of particular interest involve comparing regions and periods: to what extent do the late antique economies of the eastern and western Mediterranean from the 4th century onwards resemble each other; and how do they compare with the economy of the Roman world in, say, the 1st–3rd centuries AD? I cannot attempt here to advance a comprehensive theoretical sketch of the late antique economy—nor is it clear to me from Alston's piece that he sees how such a model should be constructed; but I want to clear up some misconceptions in Alston's reading of my paper in *Economy and Exchange in the East Mediterranean during late Antiquity*, and to advance some further questions which seem to me essential for understanding the shape of the late antique economy, in addition to those posed by Alston.

In my rather slight contribution to *Economy and Exchange* I attempted to gather some data on manufacturing activities in the cities of Cyrenaica and assess the evidence they provided for a picture of urban change between AD 200 and 642. The data were limited and often poorly dated, and I was certainly not trying to present a picture of the economy of Cyrenaica as a whole, let alone imply that Cyrenaica was typical of the wider eastern Mediterranean, or express any view on the extent to which economic activity and exchange were driven by the state. Yet Alston's review makes my remarks bear a much heavier superstructure than they were intended to, using them as the starting point for a critique of macro-economic approaches to the ancient economy. Indeed, I shall argue below that in many respects Cyrenaica was exceptional.

Much of Alston's discussion revolves around trade, taxation and the important question of the role of the state. Here I am in full agreement with him that state influence and its effects varied greatly in different regions, and that the Byzantine economy was 'more complex, diverse and commercial than state-driven macro-economic explanations would allow'. But his discussion of the state makes some major assumptions that are highly questionable; and these condition our views on the nature of the Roman and Byzantine economies, and on the relationship between them. Chief among these is the idea that the high cost of long-distance transport and the ability of the whole circum-Mediterranean region to produce a similar range of staple crops render long-distance trade uneconomic without state intervention in the market or in transport systems. It doesn't, and this kind of argument is out of touch with post-Finley thinking on the ancient economy: a host of recent studies, notably Horden and Purcell's *The Corrupting Sea*, have shown that climatic unpredictability in the Mediterranean region leads to strategies of surplus production for storage and exchange, while regional variation in quality of wines, olive oil and other produce creates different

market niches.[1] Although Alston (correctly, in my view) argues for a lesser state role than do some historians, and emphasises the importance of private commerce, he accepts the long-held opinion that technological progress in antiquity had little impact on economic development and that, therefore, 'in a model of a stable (less favourably, stagnant) economy, the state provides a major dynamic to explain change.' Clearly the state *is* a major actor; but I have recently argued that historians have massively underestimated the degree of technological development in antiquity and its impact on the economy; and in particular that the industrial scale of extraction of precious metals at the Spanish mines is one of the contributory factors to the period of economic prosperity in the first two centuries AD that we can detect from a variety of proxy indicators in this period (building inscriptions, field survey data, etc.). Conversely, cessation of such mining operations was, together with increases in army pay, one of the reasons for coinage debasement in the late 2nd and 3rd centuries AD, further exacerbated by the loss of the Dacian silver mines in 258/9.[2] Moreover, I question the assumption that the ancient economy was either stable or stagnant; a growing school of thought is arguing for intensive *per capita* economic growth in the first two centuries AD;[3] and any consideration of the archaeological evidence strongly points in this direction. Can we identify periods of growth in late antiquity too? And what is the impact of technological development or regression?

The metal supply is a crucial variable to consider in any macro-economic analysis. We are poorly informed about Byzantine mining and for the moment this hampers our analysis; the large Roman copper mines of Faeno (Wadi Faynan, Jordan) continued in operation into the Byzantine period,[4] and Papacostas in *Economy and Exchange* points to copper mines in Cyprus, but we know little of the scale of operations. We can be sure, however, that with no equivalent of the vast Spanish mines or the Dacian gold and silver mines, the Byzantine state must have had at its disposal far less new bullion from its mines per year than did the Roman empire, and we should expect this to have made a difference. Yet Banaji's compelling analysis of the late antique monetary economy points to the availability of large amounts of gold coin in circulation, and argues that the switch to a primarily gold currency ushered in an economic revival.[5] Where did all this gold come from? Does the apparent mismatch between the gold mining resources available to the Byzantine state and the amount of gold in circulation lend some credence to the claim by the author of the *De Rebus Bellicis* (2.1) that the release of temple treasures in the mid-4th century fuelled inflation? One should expect the unlocking of the accumulated hoards of several centuries of votive offerings to have had an appreciable impact; if much of the new wealth went initially into private hands, could it have had the inflationary effect implied by the anonymous author of the *De Rebus Bellicis*, before feeding progressively into the state coffers through taxation?

But another gold source is also indicated. In 1982 Timothy Garrard put forward a strong case that the commencement of gold coinage at the Alexandria mint in AD 294 and the Carthage mint in 296 indicate that supplies of gold from sources in

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[1] Horden and Purcell 2000; Mattingly 1988, *passim* but especially 34–35.
[2] Wilson 2002.
[3] Hitchner 1993; forthcoming; Mattingly 1988; Wilson 2002.
[4] Barker *et al.*, 1998; Barker *et al.*, 1999, 265.
[5] Banaji 2001.

West Africa were starting to become available through trans-Saharan trade.[6] Issues were sporadic at first, but seem to have become regular in the early 4th century, and by the 5th century various taxes from North Africa were increasingly being collected in gold. The argument is supported by the fact that metrological standards for the trade in gold dust in North Africa and the western Sudan were based on Roman units from the early Islamic period right up until the 19th century, even though the Islamic coinage of North Africa is based on non-Roman weight standards; these standards should therefore have been established in the trans-Saharan gold dust trade during the Roman period. West Africa and the trans-Saharan routes seem therefore to have provided a source of gold supply to late Roman North Africa; the Vandal conquest removed this from the grasp of the Western empire, but Justinian's reconquest of North Africa restored it to the Byzantine world, and the Carthage mint struck Byzantine gold coinage extensively and continuously from 534 to 695. Garrard notes that, according to numismatic tables of rarity, Byzantine gold coinage

> from 527–685 (Justinian I—Constantine IV) is extremely common, very common or common, whereas from 685–775 (Justinian II—Constantine V) it is very scarce, rare, very rare or extremely rare. This suggests that the empire lost a major source of its gold supply in the time of Justinian II. This was precisely when the Arab invasion of North Africa reached its peak, forcing the Byzantine mint of Carthage to close in 695. But while the flow of solidi ceased, the Arabs immediately opened a new mint at Kairouan in Tunisia and began to strike gold dinars. It is evident that the gold lost to the Byzantines had been gained by the Arabs. Since the Arabs unquestionably drew on West African gold, we may conclude that this was also the source for the Byzantine gold of Carthage.[7]

Garrard's thesis of a gold source external to the empire is especially useful because it helps to explain the otherwise puzzling discrepancy between the available sources of gold bullion within the Byzantine empire and the apparently plentiful supply of gold coin in the 6th–7th centuries.

Alston refers to 'state-like institutions', but does not develop the point. The Church is, of course, the most important state-like institution in our period: a major landowner, builder, political actor, recipient of tithes and legacies, and a redistributor of wealth. Anne Leone has recently pointed to the archaeological evidence from late Roman and Byzantine Tunisia and Tripolitania for church control of urban property, including oil presses and possibly other productive installations.[8] We lack comparable data from Cyrenaica, although the possible monastery at Siret Gasrin el-Giamel, with its oil and wine production facilities (discussed below), fits this pattern.[9]

Given the lack of ancient statistics on the economy, we must look for various proxy indicators of economic performance. Amphorae and imported ceramics are one such, discussed in *Economy and Exchange*; coinage is another. But the construction industry, so often used as a barometer of economic health in the modern world, is scarcely exploited by historians of the ancient or late antique economies, despite the possibility of studying it through standing remains and building inscriptions. The potential is well illustrated by Janet DeLaine's excellent studies of the Baths of Caracalla and of the relative costs of different forms of construction at Ostia,[10] but the building

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[6] Garrard 1982.
[7] Garrard 1982, 449.
[8] Leone 2001, vol. 1, 99–100, 102, 106–07, 245–46.
[9] Ward-Perkins and Goodchild 2003, 412–13.
[10] DeLaine 1997; 2000.

industry has yet to figure large in any general analysis of the economy. The building industry can be taken as a visible expression of large-scale public and private expenditure, and therefore as a reflection of people's capacity and willingness to spend. Here, though, we clearly encounter a major structural difference between the Roman world and the world of late antiquity; even in the Byzantine East, the number and scale of state building projects can hardly compare with those of the 1st or 2nd centuries AD, while private euergetism had dwindled to the point that new construction was largely limited to churches; in the west, of course, little is built except churches and fortifications. Not only does this reflect differing levels of surplus available for both state and private expenditure; it has a highly significant effect on the numbers employed in the building industry.

The difference in this respect between the Roman period and late antiquity is most marked in the west; north of the Alps there seems to be no production of fired bricks after *ca.* AD 400, or construction in newly-made bricks. The loss of fired brick technology in north-western Europe suggests a contraction in the building industry to the point where it could no longer sustain a sector of specialised brick-makers mass-producing material to stock, or for specific building projects. The first production of fired brick in Britain after the end of the Roman occupation was the short-lived Coggeshall brick production in the 11th century, and then again at Hull in the early 14th century. Even in Italy, brick production in Campania ceased around the 5th or perhaps the early 6th century, and at Rome, where brick production continued into the 8th century, from the 4th century onwards it was on a much reduced scale from the production of the Roman period, with increased re-use of reclaimed bricks. After the 8th century brick production is barely attested on any large scale at Rome until the 14th, or more certainly, the 15th century.[11]

It is presumably significant, therefore, that in contrast to the situation in the western empire and its successor kingdoms, construction in newly made fired bricks is a feature of the building industry in parts of the Byzantine world (though not Cyrenaica); it suggests that levels of construction activity were still sufficient to support the mass-production of standardised building materials. Spoliation and re-use of building materials were of course widespread in the Byzantine world, just as in the west. In some cases, spoliation occurred on an impressive scale, and at Ephesus and Jerash the discovery of probably 6th-century water-powered sawmills for cutting up column drums into slabs of veneer indicate almost an industrialisation of spoliation.[12] While this implies a certain technological vibrancy, the scale of Byzantine spoliation must have implications for reduced numbers of people engaged in quarrying *vis-à-vis* the Roman period.

The evidence from the construction industry highlights a substantial difference between the eastern and western Mediterranean in late antiquity, and I cannot agree with Alston's statement that: 'Once the powerful unitary Roman state disappears from the West in the early 5th century, the Roman economies of the area seem to survive, apart from in a few peripheral areas.' Possibly he is thinking of the fact that goods continued to be traded around the Mediterranean, though we have yet to have much objective quantification of how 5th-century trade compares with earlier periods (counting shipwrecks is not a reliable method). But in Spain the Ager Tarraconensis

[11] Parenti 1994, 30; Wilson forthcoming.
[12] Ephesus: Vetters 1981; 1982; 1984; Jerash: Seigne 2002a; 2002b.

survey indicates that although imported pottery continued to arrive at coastal sites, its penetration inland and to rural sites around towns was greatly reduced. The nature of the urban/rural relationship appears to have changed, and there is a profound change in the extent and efficiency of exchange networks. More generally, other factors suggest radical dislocation in many areas of economic life: contraction in 5th-century rural settlement patterns in Italy; population decline at Rome; and the wide-ranging changes in towns of Africa.[13] There may be continued long-distance trade, but the nature of 5th-century urbanism, the patterns of rural settlement, and the contraction and in some areas, virtual collapse, of large-scale building industries combine to render untenable the suggestion that the Western economy as a whole continued largely unchanged. The contrast with the East is striking, where we seem to see much greater levels of continuity, and one is tempted to suppose that this was due, at least in part, to the survival of a stronger, unitary state. I am not, though, suggesting that the state is the only significant factor; Alston is absolutely correct to point out the importance of private commercial interests as well.

Alston seems to present the possible approaches to studying the late antique economy as a choice between macro-economics and micro-economics (or at least, regional studies), although his critique of both suggests an unhappiness with either in isolation. Surely, though, we need to combine the two; to develop a macro-economic approach, and test it regionally. Where the regional micro-economic performance differs from the macro-economic forecast, this needs to be explained, either by revising the model, or by identifying regional particularities that affect performance locally.

The Economy of Late Antique Cyrenaica

In *Economy and Exchange* my contribution reviewed some archaeological data for late productive installations in the towns of Cyrenaica. For the most part these were small-scale activities, relating to the processing of agricultural produce—olive oil and wine production, and the milling of grain. Most of these installations gave the impression of differing from rural installations only in their location, not in their size, and I suggested that in many respects the functional distinction between towns and villages was being eroded in late antiquity. It was beyond the scope of my article to attempt an analysis of the Cyrenaican economy as a whole; and here we face a lack of data. We have almost no information on land-holding patterns, and problems of security clearance have so far meant that surface survey has not been possible. Despite the extensive evidence visible on old air photographs for field systems of various periods around Cyrene, our knowledge of the settlement structures within the Cyrenaican landscape at any period remains poor, and largely limited to those *gsur* or late antique fortified farms that have been studied and which remain a visible feature of the landscape. The correspondence of Synesius complains about heavy taxation, but we can put no figures on this. Synesius, although bishop of Ptolemais, tell us relatively little about the economic role of the Church. Archaeological evidence allows us to make some limited preliminary guesses at the range of goods produced and exported, but much more fieldwork needs to be done.

Salted fish and fish products (sauces) would seem to be an obvious product of the

[13] Spain: Millett 1991; Keay 1991; Carreté *et al.*, 1995, 280–81. Italian settlement (South Etruria): Potter 1979, 141–45. Africa: Potter 1995.

region, but we have no archaeological remains of salting vats, or any amphorae identified as being for salted fish. The only evidence we have is anecdotal—Synesius' reference to Andronicos of Berenice as originally having been a tunny fisherman (*Letter* 57). He also relates a story of how he astonished an inland community who had never seen fish before by showing them an amphora of salted fish—but the amphora was from Egypt, not Cyrenaica (*Letter* 148). Grain, horses and honey are possible exports suggested by literary sources of various periods, though unsurprisingly we can point to no archaeological proofs for this. Silphium was still cultivated, and its juice and extracts exported, in Synesius' time (*Letter* 134); other products mentioned by Synesius as products of inland Cyrenaica are wheat, honey, milk (from goats only; he says cows are not milked), and of course olive oil and wine (*Letter* 148). Olives and grapes are crops well suited to the Cyrenaican landscape, but Synesius' praise of Cyrenaican olive oil clearly indicates that it was a second-rate product—he praises its heaviness, and its utility as lamp fuel and as a massage oil for athletes, contrasting it to lighter oils from elsewhere (which were no doubt better for cooking with).[14] In a letter probably dating from 406 Synesius refers to a cargo of wine he is sending to a friend, but says that the loading of a cargo of olive oil, saffron, silphium and ostriches has been prevented by the depredations of the Austuriani (*Letter* 134). Synesius appears to be sending these as gifts, rather than exporting them on a commercial basis. We would expect some commercial export of these products, but we cannot as yet estimate the scale of such activity. Although evidence is now coming to light for the export to Italy (Rome, Ostia and the Veneto) during the 3rd century AD of whatever was carried in Cyrenaican Mid-Roman 8 amphorae,[15] no Cyrenaican amphora types from late antiquity have yet been recognised either inside or outside the region. This is not in itself evidence for a lack of exports in these products—it serves to illustrate how little work has been done on the archaeology of the Cyrenaican economy—and there remains the possibility that some produce may have been exported in re-used amphorae. At Berenice, a group of Late Roman 1 amphorae found in association with wine storage or fermentation vats were probably awaiting re-use.[16] But one would expect that, had there been a substantial export trade in Cyrenaican amphorae-borne commodities, local amphora types would have been developed, and these should be more prominent in the archaeological record. The impression that Cyrenaica's trading links with some other parts of the eastern Mediterranean were not extensive at this period seems supported by Synesius' remarks that ships rarely sailed between Cyrenaica and Syria (*Letter* 148), and the implication in *Letter* 52 that a certain Athenian trader, selling boots and cloaks, called very infrequently at the Cyrenaican ports.

Although we cannot, in our present state of knowledge, argue for the large-scale export of Cyrenaican oil or wine in late antiquity, we can point to a considerable number of sites where these were produced. It must always be borne in mind that

[14] Modern Cyrenaican olive oil is also very heavy, and poor for cooking, but gives a good flame.

[15] Ferrarini 1993, 158. From the morphology of the neck, I would suspect oil rather than wine as the principal contents of Mid-Roman 8 amphorae, although salted fish remains a possibility.

[16] Lloyd 1977, 148. For reused amphorae in the Roman period, see, for example, the Grado shipwreck: Auriemma 2000.

our evidence for oil and wine is going to be over-represented by comparison with e.g. grain or honey, because of their archaeologically distinctive and durable processing equipment. Besides the evidence for oil and wine production in urban contexts which I summarised in *Economy and Exchange*, we have numerous wine and oil presses from villages and isolated *gsur* (fortified farms). The most impressive such site is the village of Lamluda, east of Cyrene, which, apart from clearance of a church by Goodchild, has seen no formal excavation. The ruins appear to be predominantly late, and include the remains of two churches, the westernmost of which may be 6th century, a Byzantine bath-house, and numerous cisterns and oil presses.[17] On brief visits in 2002 and 2003 I counted some 50 upstanding or exposed oil presses. This would appear to be an agro-village, where the majority of the population worked the land around the settlement, but the scale of production clearly indicates surplus for the market; whether this was all absorbed by late antique Cyrene, or if some of it found its way further afield, we simply cannot tell without better knowledge of what, if any, amphorae Cyrenaica produced at this period.

At Siret Gasrin el-Giamel, 12 km west of Cyrene near El-Beida, there are two *gsur*, both equipped for the production of oil and wine; the occupation of both is dated on ceramic evidence to the 5th–7th centuries AD. One is a possible monastery, and the other a fortified agricultural centre.[18] In the first phase of the latter, in the late 5th/early 6th century, there were a wine press and 17 terracotta dolia; later, in the first half of the 6th century, oil presses were added—one in an underground rock-cut chamber, and three in an above-ground building.[19] At Gasr Bandis, a settlement centred on a *gasr* includes houses, baths, cisterns and 'numerous presses for olives and grapes together with vats, and a partially excavated mosaic floor'.[20] Although the presses are undated, the mosaic floor is thought to be 6th-century on the basis of similarities with the Justinianic mosaics from Gasr Libia. Elements of oil presses (uprights, counterweight blocks, or rotary olive crushing mills) are commonly found at late but undated *gsur*, for example at Tansolluk between Hadrianopolis (Driana) and (Tocra). Many, perhaps all, of the late antique fortified farms of the region were producing oil, and some wine as well. One of the most revealing sites, though, is Tarakanet, a rock-cut underground chamber with a rotary olive mill and shallow oil separation vats; 6th-century Christian inscriptions celebrate, in extravagant terms, the construction of this rather humble installation by one Samphoudion, who appears to have been a *praepositus* among the Maurysii (Moors or Libyans) and subsequently elected a *strategos* by his unnamed city.[21] The inscriptions give the impression that the creation of this single-press installation was a major and arduous achievement; the contrast between this and the functional, uninscribed simplicity of the vast oil factories of 3rd-century AD Tripolitania or south/central Tunisia, each with 6, 9, 10 or even 17 oil presses, is striking, and speaks volumes about the expectations of investment, expenditure and command of resources in the two different societies.[22]

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[17] Ward-Perkins and Goodchild 2003, 294–302.
[18] Ward-Perkins and Goodchild 2003, 413.
[19] Catani 1976; 1998.
[20] Ward-Perkins and Goodchild 2003, 393.
[21] Ward-Perkins and Goodchild 2003, 415–17.
[22] See, for example, Oates 1953, 97–100 (Henchir Sidi Hamdan, 9 presses); Cowper 1897, 279–82 (Senam Semana, 17 presses).

The building industry is much reduced from its scale in the imperial period, with the exception of churches, and (predominantly) rural fortifications. In late antiquity imported marble is found almost exclusively in churches; the major sources are the Aegean quarries, especially Proconnesus. In the 4th century, non-monumental building techniques reach a low point after the earthquake of AD 365; recent excavations at Balagrae (El-Beida) have uncovered a modest and crudely built structure erected after the 365 earthquake on the ruins of its predecessor, which itself had been built of large re-used ashlars robbed from a Roman building.[23] Nevertheless, a high-quality masonry tradition survives or revives later, with fine work at several of the 6th-century rural *gsur* and monasteries, such as Siret Gasrin el-Giamel.

Overall, our data on the economy of Cyrenaica are still very limited for both the Roman and the Byzantine periods, and drawing wide-ranging conclusions is hazardous. Olive oil was apparently an important product; so too was wine, and probably also a range of other crops and goods with minimal archaeological signatures. Without recognised Cyrenaican amphorae to prove export, we cannot say that there was a significant export trade, and the impression gained from Synesius's *Letters* is of a province somewhat remote from the main currents of Mediterranean trade and communication. It is from the evidence of buildings, the decline of euergetism and the concentration in the built environment of late antiquity on religion and defence, that we really gauge the dislocation between the modest prosperity of the Roman period and the embattled subsistence of the 4th and 5th centuries. There are indications, from church building and from dated *gsur* such as Siret Gasrin el-Giamel, of a revival in the late 5th and the 6th centuries, notably in the Justinianic period; but we cannot go much beyond this without further excavation of a number of rural sites.

Cyrenaica and the Rest of the Byzantine World

Alston argues (see above p. 130) that

> A macro-economic or state political explanation for the archaeological evidence attesting urban decay in late Roman Cyrenaica falls not because it is inherently improbable or because macro-economics or the state had no effect on the situation in the provinces, but because of the urban and rural prosperity attested east and west, north and north-east of Cyrenaica. It is very difficult to know why communities capable of producing the sophisticated Alexandrian-trained scholar and bishop Synesius were unable to deploy sufficient resources to stop their cities being turned into war zones (at least on Wilson's reading of the architecture), when in so many places the period from *ca.* 300 to at least 540 was one of relative peace and prosperity.

But there is no necessary link between the intelligence and training of an individual like Synesius—who, moreover, goes outside the region for his education—and the levels of private or civic wealth or state investment in the region. Synesius' literary output is not an index of the Cyrenaican economy's performance. More important is the point that Alston correctly highlighted; why does Cyrenaica behave so differently from, say, Egypt or Syria? (I dispute his implication that Tripolitania was significantly prosperous after the 4th century; apart from a brief revival under Justinian with state-injected funds, marked largely by church-building and fortifications, the picture from the archaeology of the cities there is one of contraction and decay; and the rural

[23] Buzaian and Bentaher 2002.

landscape looks increasingly embattled, with the courtyard farms of the 2nd and 3rd centuries now replaced by *gsur* or fortified farms, with nothing on the scale of the large oil factories of the 2nd and 3rd centuries.)

I would argue that the difference between Cyrenaica and Egypt is explained by the fact that Cyrenaica was never strategically critical or economically vital to the Byzantine empire. It never seems to have been a major exporter, unlike Egypt with the grain supply, or Roman and late Roman Tripolitania with its oil exports. The opportunity for local elites to amass wealth on the basis of trade on the scale which the elites of Tripolitania or Alexandria did was therefore limited. Geographically, the Djebel Akhdar or Green Mountain of Cyrenaica lies like an island of fertile terrain between the Syrtica and Marmarica, separated from Tripolitania and Egypt by hundreds of miles of desert. Strategically, to an empire that includes Tripolitania and Egypt, it makes sense to hold Cyrenaica too, to facilitate communications along the southern Mediterranean. But once the empire split and Tripolitania went with the Western empire, Cyrenaica became an isolated outpost on the south-west fringes of the Byzantine world. And when, in the late 4th and the 5th century, Cyrenaica suffered earthquakes, a plague of locusts, pestilence (Synesius, *Letter* 58) and then was repeatedly raided by the semi-nomadic tribes of the pre-desert, the state had more pressing concerns. Synesius makes it very clear that he thinks the state's attempts at garrisoning the region and defending against tribal raids are woefully inadequate (*Letters* 78, 107, 125), and it may be that the imperial command in Byzantium did not take the threat to the region from desert tribesmen seriously enough to send an adequate force for defence, or provide sufficient monetary aid. The burden of defence was therefore thrown onto the local elites, men like Synesius who found themselves, by virtue of their position as church leaders, organising local militias (*Letter* 125), while farmers were constrained to fortify their farms and build *gsur*. So any profits from agriculture were ploughed into defence, so that the relatively low-intensity raids could be survived by sheltering in fortified farms and urban blockhouses until the Libyans went away again. But the long-term damage to the economy was done by the repeated burning of crops; the agricultural surplus must have been gravely threatened as each year the desert tribesmen came and torched the fields (Synesius, *Letters* 125, 130). And if the region was not a major exporter, the opportunities for disposal of surplus relied on local and regional markets; what little we can suggest about the demography of the period is not positive, with the cities showing clear signs of contraction. There is no market-driven expansion of agricultural production here. In such a situation, with reduced agricultural yields and increased costs of defence, the economy would be quickly crippled without state investment or relief. Small wonder, perhaps, that a century or two later Samphoudion viewed the building of a single olive press in a (defensible?) underground chamber as an achievement to boast about.

This contrasts clearly with Banaji's picture of Egypt in the same period; he argues from the papyrological evidence that until the late 4th century the Egyptian countryside had been dominated by families connected with town councils; but from the middle of the 5th century a new powerful and unified aristocracy was emerging, consolidating land holdings into vast estates and investing in them for profit. The wine trade was dominant and the large private estates (*ousiai*) were largely controlled by Alexandrians; and the connections with Alexandria suggest that the estates were engaged in mass production for the urban market and for export further afield.[24]

[24] Banaji 2001, 111, 132.

Cyrenaica did not see the emergence of a super-rich aristocracy to the same degree, perhaps because it had no large urban port of the scale of Alexandria, and because the rural instability of the region required defence and inhibited investment in the productive infrastructure of estates.

Cyrenaica, therefore, perhaps provides a model for what happens to provinces when their strategic and economic importance drops below the threshold that warrants the close attention of an empire only able to deal with a limited number of crises. Once the state is no longer able to protect the region against incursion, there is a severe knock-on effect on private investment in agricultural production, commerce and trade. The urban changes and the fortification of the countryside that we see in late 4th-century Cyrenaica are paralleled in mid-4th-century Tripolitania and—for the towns at least—in 5th-century Africa once it has come under Vandal rule. Just as Cyrenaica was never very important in the pan-Mediterranean Roman scheme of things, so once the Tripolitanian export ports had been devastated in the 360s by the combined impact of the Austuriani and the earthquake of 365, olive oil export collapsed and the outlets for trans-Saharan trade failed, and the region effectively dropped off the imperial radar until its reconquest by Justinian. Fifth-century Africa was lost to the Western empire because even Italy was increasingly unable to defend itself. I am not, however, proposing a model that subordinates economic history to political history; quite the reverse, since one could make a case for seeing Cyrenaica as a province neglected in political terms precisely *because* it was not economically very important.

But Cyrenaica is not typical. Therein, perhaps, lies its value as a region for study; if we can understand *how* it differs from other regions, that throws into sharper focus the local interplay of macro-economic and micro-economic factors.

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BIBLIOGRAPHY

Auriemma, R. 2000: 'Le anfore del relitto di Grado e il loro contenuto'. *Mélanges de l'École française de* Rome (Antiquité 112), 27–51.

Banaji, J. 2001: *Agrarian Change in Late Antiquity: Gold, Labour and Aristocratic Dominance* (Oxford).

Barker, G.W., Adams, R., Creighton, O.H., Gilbertson, D.D., Grattan, J.P., Hunt, C.O., Mattingly, D.J., McLaren, S.J., Mohamed, H.A., Newson, P., Reynolds, T.E.G. and Thomas, D.C. 1998: 'Environment and Land Use in the Wadi Faynan, Southern Jordan: the Second Season of Geoarchaeology and Landscape Archaeology (1997)'. *Levant* 30, 5–25.

Barker, G.W., Adams, R., Creighton, O.H., Crook, D., Gilbertson, D.D., Grattan, J.P., Hunt, C.O., Mattingly, D.J., McLaren, S.J., Mohamed, H.A., Newson, P., Palmer, C., Pyatt, F.B.,

Reynolds, T.E.G. and Tomber, R. 1999: 'Environment and Land Use in the Wadi Faynan, Southern Jordan: the Third Season of Geoarchaeology and Landscape Archaeology (1998)'. *Levant* 31, 255–92.

Buzaian, A.M. and Bentaher, F. 2002: 'Preliminary report on two seasons of excavations at Balagrae (al-Beida)'. *Libyan Studies* 33, 125–31.

Carreté, J.-M., Keay, S.J. and Millett, M. 1995: *A Roman Provincial Capital and its Hinterland: The Survey of the Territory of Tarragona, Spain, 1985–1990* (Ann Arbor).

Catani, E. 1976: 'I frantoi della fattoria bizantina di El-Beida'. *Quaderni di archeologia della Libia* 8, 435–48.

——. 1998: 'Fase edilizie e techniche murarie della fattoria paleobizantina di Siret el Giamel nella *Chora* Cirenea'. In Catani, E. and Marengo, S.M. (eds.), *La Cirenaica in età antica* (Pisa/Rome), 113–35.

Cowper, H.S. 1897: *The Hill of the Graces: A Record of Investigation among the Trilithons and Megalithic Sites of Tripoli* (London).

DeLaine, J. 1997: *The Baths of Caracalla: A Study in the Design, Construction and Economics of Large-scale Building Projects in Imperial Rome* (Portsmouth, USA).

——. 2000: 'Bricks and mortar: exploring the economics of building techniques at Rome and Ostia'. In Mattingly, D.J. and Salmon, J. (eds.), *Economies beyond Agriculture in the Classical World* (London), 271–96.

Ferrarini, F. 1993: 'Osservazioni su due tipologie di anfore della media età imperiale da Altino'. *Quaderni di archeologia del Veneto* 9, 157–64.

Garrard, T.F. 1982: 'Myth and metrology: the early trans-Saharan gold trade'. *The Journal of African History* 23.4, 443–61.

Hitchner, R.B. 1993: 'Olive production and the Roman economy: the case for intensive growth in the Roman empire'. In Amouretti, M.-C. and Brun, J.-P. (eds.), *La production du vin et de l'huile en Méditerranée* (Athens), 499–508.

——. forthcoming: '"The advantages of wealth and luxury": the case for economic growth in the Roman empire'. In Manning, J. and Morris, I. (eds.), *The Ancient Economy: Evidence and Models* (Stanford).

Horden, P. and Purcell, N. 2000: *The Corrupting Sea* (Oxford).

Keay, S.J. 1991: 'The *Ager Tarraconensis* in the late Empire: a model for the economic relationship of town and country in eastern Spain?'. In Barker, G.W.W. and Lloyd, J.A. (eds.), *Roman Landscapes: Archaeological Survey in the Mediterranean Region* (London), 79–87.

Leone, A. 2001: *Evolution and change: town and country in late antique North Africa* (PhD Thesis, University of Leicester).

Lloyd, J.A. (ed.) 1977: *Excavations at Sidi Khrebish, Benghazi (Berenice)* vol. 1 (Tripoli).

Mattingly, D.J. 1988a: 'Oil for export? A comparison of Libyan, Spanish and Tunisian olive oil production in the Roman empire'. *Journal of Roman Archaeology* 1, 33–56.

——. 1988b: 'The olive boom. Oil surpluses, wealth and power in Roman Tripolitania'. *Libyan Studies* 19, 21–41.

Millett, M. 1991: 'Pottery: population or supply patterns? The *Ager Tarraconensis* approach'. In Barker, G.W.W. and Lloyd, J.A. (eds.), *Roman Landscapes: Archaeological Survey in the Mediterranean Region* (London), 18–26.

Oates, D. 1953: 'The Tripolitanian Gebel: settlement of the Roman period around Gsar ed-Daun'. *Papers of the British School at Rome* 21, 81–117.

Parenti, R. 1994: 'I materiali di costruzione, le tecniche di lavorazione e gli attrezzi'. In Brogiolo, G.P. (ed.), *Edilizia residenziale tra V e VIII secolo* (Mantua), 25–37.

Potter, T.W. 1979: *The Changing Landscape of South Etruria* (London).

——. 1995: *Towns in Late Antiquity: Iol Caesarea and its Context* (Sheffield).

Seigne, J. 2002a: 'A sixth-century waterpowered sawmill at Jerash'. *Annual of the Department of Antiquities of Jordan* 46, 205–13.

——. 2002b: 'Une scierie méchanique au VI^{e} siècle'. *Archéologia* 385, 36–37.

Vetters, H. 1981: 'Ephesos, Vorläufiger Grabungsbericht 1980'. *Anzeiger der Österreichischen Akademie der Wissenschaften, Wien, Philologisch-historische Klasse* 118, 137–68.

——. 1982: 'Ephesos, Vorläufiger Grabungsbericht 1981'. *Anzeiger der Österreichischen Akademie der Wissenschaften, Wien, Philologisch-historische Klasse* 119, 62–101.

——. 1984: 'Ephesos. Vorläufiger Grabungsbericht 1983'. *Anzeiger der Österreichischen Akademie der Wissenschaften, Wien, Philologisch-historische Klasse* 121, 209–32.
Ward-Perkins, J.B. and Goodchild, R.G. 2003 (ed. J. Reynolds): *Christian Monuments of Cyrenaica* (London).
Wilson, A.I. 2002: 'Machines, power and the ancient economy'. *The Journal of Roman Studies* 92, 1–32.
——. forthcoming: 'The Economic impact of technological advances in the Roman Construction industry'. In Lo Cascio, E. (ed.), *Innovazione tecnica e progresso economico nel mondo romano*.