IMPACTS BEYOND EMPIRE:
ROME AND THE GARAMANTES OF THE SAHARA
By
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Introduction

If there are numerous uncertainties about the scale, structures, motivations and aspirations that underlay economic behaviour within the empire, the problems are even more acute outside its frontiers. This paper will examine some aspects of the economic impact of the Roman empire beyond its frontiers, using the Garamantes of the Libyan Sahara as a case study. A major obstacle to advancing our understanding of the ancient economy concerns the extent to which our reading of the evidence is coloured by simplistic assumptions (or an over eager acceptance of a 'Roman' perspective as though that was an objective viewpoint). European scholarship on the ancient world has in addition its own set of imperial reference points, derived from a shared history of global economics, and as such we need to examine closely certain aspects of our approach to the ancient world.¹ In this regard, John Drinkwater's paper in this volume stands out as an attempt to model the impact of Rome in Gaul as something less one-dimensional. I shall pick up on his use of the term 'convergence' in bringing out what I think are a number of parallels between the two very different pre-Roman worlds he and I are describing.

This paper is in three sections, each providing a different perspective on the Garamantes of southern Libya. The first is a highly subjective one (in this case derived from Mortimer Wheeler, but similar assumptions are pervasive in many more recent books);² the second is based on the ancient sources and the third on modern archaeological work. Clearly the most nuanced view will combine the second and third categories, whilst using awareness of the drawbacks of the first. Subsequent to Wheeler's overview, the late Charles Daniels in the 1960s and 1970s made an important study of

¹ On the modern historical approach to economic imperialism, see D.S. Landes, *The Wealth and Poverty of Nations* (London 1998). On post-colonial approaches to Roman imperialism, see D. Mattingly, ed., *Dialogues in Roman Imperialism* (Portsmouth RI 1997); J. Webster & N. Cooper, eds., *Roman Imperialism: Post colonial perspectives* (Leicester 1996).

² M. Wheeler, *Beyond the Imperial Frontiers* (London 1955), 119 ff. For further mythologising of the Garamantes, see *inter alia* H. Lhote, *Les chars rupestres Sahariennes* (Toulouse 1982); B. Toy, *The Way of the Chariots* (London 1964), 67. The Garamantes also suffer from scholarly neglect – for instance, they are virtually ignored by the *OCD*³ and entirely so by D.W. Phillipson, *African Archaeology* (Cambridge 1992).

the Garamantian heartlands, though unfortunately this was never fully published at the time (for the location, see Fig. 1, inset).³ In recent years I have been able to return to the region for a new series of campaigns, and, as a result, we are now in a far better position to reassess the economic relations of this important Saharan civilisation with Rome.⁴

Mortimer Wheeler's view of the Garamantes

But let me start with Mortimer Wheeler. In his seminal book, *Rome beyond the Imperial Frontiers*, he characterised the relationship between Rome and her troublesome southern neighbours in the Libyan desert as “the age-old struggle between the settled civilisation of the Mediterranean littoral and the nomads or semi-nomads of the mountain and desert”.⁵ He went on to outline how the wily Romans dealt with the “Fezzani nomads” by “turning them into food-producers, by teaching them to till their own deserts”.⁶ Desert irrigation systems that had been recorded by Italian archaeologists in the 1930s were thus interpreted by Wheeler as the result of Roman technical instruction and Romanised monuments as structures built by or for the use of Roman technical advisers and merchants present in Fezzan.⁷

The interesting point here is that Wheeler's account goes a good deal beyond the ancient sources in identifying an active role for Romans in the economic transformation of her desert neighbours – in his view, farming depended on Roman know-how, there were technical advisers and foreign residents to help bring about this great triumph of paternalistic humanity. The post-imperial age was just dawning when Wheeler wrote this book, but 50 years on this model of Rome's economic interaction with people beyond its frontiers is plainly in need of review. Yet far too commonly, Rome's economic dealings with people beyond her frontiers are still presented in largely unilateral terms – Rome set the terms, created commodities and

³ C.M. Daniels, *The Garamantes of Southern Libya* (London 1970); Idem, ‘Excavation and fieldwork amongst the Garamantes’, *Libyan Studies* 20 (1989), 45–61.

⁴ D.J. Mattingly, *et al.*, interim reports in *Libyan Studies* 28 (1997) – 32 (2001). With support from the British Academy and the Leverhulme Trust, Daniels' work has been prepared for publication alongside the new fieldwork, D.J. Mattingly *et al.*, *The Archaeology of Fazzan, volume 1 Synthesis; volume 2, Gazetteer and finds from the survey; volume 3, Excavations of the Late C.M. Daniels* (London forthcoming).

⁵ Wheeler 1955, *op. cit.* (n.2), 129.

⁶ Wheeler 1955, *op. cit.* (n.2), 131.

⁷ B. Pace, S. Sergi & G. Caputo, ‘Scavi Sahariani’, *Monumenti Antichi* 41 (1951), 150ff. (213–218 for the irrigation systems, 252–270 for the mausoleum); C.M. Daniels, ‘The Garamantes of Fezzan’, in F.F. Gadallah, ed., *Libya in History. Proceedings of a conference held at the Faculty of Arts, University of Libya 1968* (Benghazi 1971), 267 f.

markets, encouraged interest when it suited, cut off contact at will.⁸ Unfortunately, the neighbours of the Roman empire are generally mute witnesses to their transactions. It is my contention here that we need to look more closely at the archaeological evidence from these external regions to understand both sides of the economic equation and to identify signs of convergence.

The existence of an economic link between Rome and the Garamantes has been abundantly clear for many years from the archaeological evidence. Wheeler was struck by the quantity and quality of Roman trade goods from burials excavated by the Italians during the 1930s in Garamantian territory and interpreted them as evidence of Rome's attempt to control a thriving trans-Saharan trade, in which the Garamantes had hitherto played the role of middlemen.⁹ In a recent and illuminating study, Fontana has observed that the range of imports included in the tombs exhibit a marked uniformity in key respects. Although the richness of the grave assemblages varies considerably, the chief components commonly included wine amphorae and the panoply of drinking utensils – jugs, cups and glass beakers. Oil amphorae and oil lamps are another distinctive element.¹⁰ In this emphasis on commodities of consumption and the social panoply associated with consumption, the Garamantes resemble the Gallic and Celtic peoples of N Europe. These are classic signs of societies on course for convergence with the Roman empire.¹¹

The key issue with the adoption of elements of Roman material culture outside the empire was the extent to which this was driven by the State or by those tied in to the economic or political structures of the State, as opposed to the individual recipients and consumers of Roman goods beyond the frontier. Generally Wheeler was in no doubt about who was in charge of

⁸ See for example the work of M. Erdrich, *Rom und die Barbaren*. Römisch-Germanische Forschungen 58 (Mainz 2000).

⁹ Pace *et al.* 1951, op. cit. (n. 7), 279-320 on grave goods; Wheeler 1955, op. cit. (n.2), 123-128; Daniels 1970, op.cit. (n.3), 42-44; R.A. Dart, 'The Garamantes of Central Sahara', *African Studies* 11 (1952), 28 ff.; R.M. Haywood, 'Roman Africa' in T. Frank, ed., *An Economic Survey of the Roman Empire* (Paterson NJ 1959) 4, 62-69.

¹⁰ S. Fontana, 'I manufatti Romani nei corredi funerari del Fezzan. Testimonianza dei commerci e della cultura dei Garamanti (I-III sec. d. C.)', in *Productions et exportations africaines. Actualités archéologiques. VIe colloque international sur l'histoire et l'archéologie de l'Afrique du nord* (Paris 1995), 405 ff.

¹¹ On the impact of Italian wine on the Celtic World, see B. Cunliffe, *Greeks, Romans and Barbarians. Spheres of interaction* (London 1988); A. Tchernia, 'Italian wine in Gaul at the end of the Republic', in P. Garnsey, K. Hopkins & C.R. Whittaker, eds., *Trade in the Ancient Economy* (Cambridge 1983), 87 ff.

economic contact across frontiers or of the intrinsic desirability of Roman goods – the barbarian adoption of them was seen as an entirely natural response.¹² Those certainties have for the most part gone now, to be replaced by an uneasiness about the patterning in the data and a growing recognition that Rome's neighbours were not simply passive recipients, but could also be active agents.¹³

Notwithstanding this fact, the term “impact” still seems to be appropriate in this context, because for the most part it seems to me that the economic intersection of the Roman world and her neighbours did result in accelerated and profound changes. Keith Hopkins once observed that Roman period archaeology in many parts of the Old World, both inside and outside the Empire, stands out as the apogee of material culture consumption for range and quantity of manufactured goods.¹⁴ My own experience in diachronic archaeological survey and excavation has generally supported this axiom. We can argue about the semantics, of course, but I believe that this betokens economic growth and change on a very broad front (though the starting point was not always very high).¹⁵

Returning to the assemblages in Fezzan, my excavations at the Garamantian capital (modern Jarma) have shown that the material culture of the Roman period levels surpassed by an order of magnitude that of the preceding and succeeding millennia.¹⁶ Part of the pattern is due to imported material from the Mediterranean world. Abundant pottery, glassware, wine and oil was carried 1000 km across the desert, but questions remain about

¹² An alternative hypothesis that these goods were extorted by peripheral peoples as gifts and bribes again seems to limit the real economic impact of the exchange, see Daniels 1970, op.cit. (n.3), 42-44.

¹³ On the distribution patterns of Roman goods beyond the frontiers of the empire, see, *inter alia*, Erdrich 2000, op. cit. (n. 8); L. Hedeager, ‘A quantitative analysis of Roman imports in Europe north of the limes (1-400 AD) and the question of Roman-Germanic exchange,’ in K. Kristiansen & C. Paludan-Müller, eds., *New Directions in Scandinavian Archaeology* (Copenhagen 1978), 191 ff.; F. Hunter, ‘Roman and native in Scotland: new approaches,’ *Journal of Roman Archaeology* 14 (2001), 289ff.

¹⁴ K. Hopkins, ‘Taxes and trade in the Roman empire’, *Journal of Roman Studies* 70 (1980), 104, n. 13 (though the statement perhaps rings truer for the western provinces than for the eastern ones).

¹⁵ R.B. Hitchner, ‘The advantages of wealth and luxury. The case for economic growth in the Roman empire,’ in J. Manning & I. Morris, eds., *The Ancient Economy: evidence and models* (Stanford forthcoming); P. Millett, ‘Productive to some purpose? The problem of ancient economic growth’, in D. Mattingly & J. Salmon, eds., *Economies beyond Agriculture in the Roman World* (London 2000), 17 ff.

¹⁶ D. Mattingly *et al.*, ‘The Fezzan Project 2001: Preliminary report on the fifth season of work’, *Libyan Studies* 32 (2001), 133 ff. (the total amount of small finds from Garamantian levels was more than double those from all succeeding levels and many of the small finds from upper levels of the site were residual Garamantian finds).

the nature of the goods exchanged for these commodities. Wheeler's answer for once was uncharacteristically cautious: "Gold-dust, ostrich eggs and feathers, ivory, precious stones and woods, animals, slaves have been lightly mentioned, but it must be admitted that specific historical evidence is of the slightest".¹⁷

To summarise thus far. Wheeler characterised the Garamantes as 'nomads', though in fairness he had adopted the common perspective of our Graeco-Roman sources that their southern desert neighbours were uncivilised pastoralists and troublemakers. He does not recognise the possibility of local manufacturing of goods or of the potential value of local resources. Another blind spot concerns the assumption that the economic relationship was something unilaterally entered into by the Roman state, with the barbarians grateful for what they could get of a higher culture's material goods, and with the Roman state supplying technical expertise for the betterment of the desert society. The archaeological evidence now available reveals a rather different picture. It suggests a more complex set of economic relations between Rome and her neighbours.

Since Wheeler, most commentators on the trade between the Garamantes and Rome have followed a cautious line, playing down the economic scale and importance of the links and specifically differentiating between the Roman period and later Islamic trans-Saharan trade.¹⁸ At one time I shared this view, and expressed doubts about the economic significance of Roman trans-Saharan trade. I am less convinced of this now that I have seen the evidence of the trade first hand, and this view is echoed by Mario Liverani, director of an Italian team also investigating the Garamantes.¹⁹ In a brilliant analysis of the famous Herodotean account of the Sahara, Liverani has pointed out that the 10 day interval that recurs throughout that section is in fact the canonical distance between major wells in all periods of Saharan trade – in other words it represents the maximum distance that an animal borne caravan can safely travel between major wells and oases. The logic is that the places mentioned by Herodotus had been

¹⁷ Wheeler 1955, op. cit. (n.2), 132.

¹⁸ R. Carpenter, 'A trans-Saharan trade route in Herodotus', *American Journal of Archaeology* 60 (1956), 231 ff.; R.C.C. Law, 'The Garamantes and Trans-Saharan enterprise in classical times', *Journal of African History* 8.2 (1967), 181 ff.; E.W. Bovill, *The Golden Trade of the Moors* (Oxford 1968, 2nd ed.), 6-40.

¹⁹ D. Mattingly, *Tripolitania* (London 1995), 155-157. Cf. now M. Liverani, 'The Garamantes: a fresh approach', *Libyan Studies* 31 (2000), 17 ff.

specifically developed in the early first millennium B.C. as a trade route.²⁰ I find this remarkably persuasive and it ties in with current thinking about the introduction of the horse (followed by the camel as well before the end of the first millennium B.C.). It also demonstrates the role of Libyan communities in creating their own trade routes, following a pattern that was to a large extent outside the control of Mediterranean powers (in this example, it is a route from the Western Desert of Egypt, passing via the major central Saharan nexus of oases and ultimately reaching the Niger).

The Greco-Roman view of the Garamantes

It is time now to introduce the perspective of the ancient sources on the Garamantes and their economic orientation. The ancient sources, some of which are summarised in Table 1, generally characterised the Garamantes as a populous, but wayward desert people, with a propensity for lawlessness and raiding.²¹ Their economy is alluded to only in a very general way, but associations with pastoralism are prominent (the famous backward grazing cattle). This stereotype was probably already out of date in Herodotus' time, and bore little relationship to the reality of life. The account of Herodotus was remarkably durable and was still being regularly dusted off even in late antiquity. But the military expeditions against the Garamantes that are mentioned by Pliny and Tacitus, and hinted at by Ptolemy, as well as contact between Garamantes and traders over many centuries ought to have meant there was accurate and up-to-date information about the Garamantes. Only the vaguest hints of this emerge in the sources. There are of course various *topoi* at work here and we must be cautious about accepting at face value uncorroborated statements.

²⁰ M. Liverani, 'The Libyan caravan road in Herodotus IV.181-184', *Journal of the Economic and Social History of the Orient* 43.4 (2000), 496 ff; the same 10 day interval is well established in the medieval accounts of trans-Saharan trade, see J. Thiry, *Le Sahara libyen dans l' Afrique du Nord médiévale* (Leuven 1995), 399 ff.

²¹ Mattingly 1995, op.cit. (n.19), 155 ff.; J. Desanges, *Catalogue des tribus africaines de l'antiquité classique à l'ouest du Nil* (Dakar 1962), 93-96; Idem, *Plin l'ancien, Histoire naturelle Livre V.1-46 (L'Afrique du Nord)* (Paris 1980); *Encyclopédie Berbère* s.v. Garamantes (Aix en Provence), 2969-2971.

Source	Date of source	Description
Herodotus 4.183-185	5 th c. B.C.	Describes chain of oasis stretching from Nile to Atlantic. Ammon (Siwa) is 10 days from Augila and the next oasis beyond Augila (10 days journey) is in land of Garamantes. The Garamantes described as an exceedingly numerous people. Herodotus notes that they cultivated salty ground by spreading humic material over it. He also records that they herd cattle, noting the peculiarity of the cattle to graze backward. Garamantes situated a 30 day journey from the coast – most direct route is to land of Lotophages (Gerba). Reference to their hunting Troglodyte Ethiopians in 4-horse chariots. West of the Garamantes (after 10 days) come the Atarantes, then after another 10 days a mountain called the Atlas and a people called the Atlantes, then after a further 10 days a salt mine.
Strabo 17. 3.19	1 st c. B.C.	Above the Gaetuli is the country of the Garamantes from which comes the Carchedones (semi-precious stones known as Carthaginian stones). Garamantes live 9-10 days from Ethiopians and 15 days from oasis of Ammon. Notes horse-rearing as very important (among Garamantes and Gaetuli?)
Pliny 5. 35-38	1 st c. A.D.	Reference to campaign of Cornelius Balbus in 20 B.C. against Cidamus and the Garamantes. Mentions subjugation of Garamantian capital (<i>clarissimum oppidum Garama caput Garamantum</i>) by Balbus Mount Gyri indicated as location from which precious stones (<i>gemmae</i>) come. Reference to Garamantian brigands (<i>latrones</i>) covering over well heads to impede pursuit to desert heartlands.
Pliny 13.111	1 st c. A.D.	Describes large date palms with fine fruit from deserts of interior Africa, including lands of the Garamantes. Most famous dates from Ammon (Siwa)
Pliny 37.92	1 st c. A.D.	Carthaginian stones/carbuncles from desert
Seneca <i>HercO.</i> 1106-10; <i>Phaedrus</i> 68	1 st c. A.D.	Reference to the scattered Garamantes (<i>sparsus Garamans</i>) and the miserable Garamantes (<i>inops ... Garamans</i>)
Tacitus, <i>Ann</i> 4.23-26	2 nd c. A.D.	King of Garamantes named as an ally of Tacfarinas in raids and as 'receiver of booty', but notes that light armed troops sent by him, not a proper army. After death of Tacfarinas (AD 24), the Garamantes sent a deputation to Rome to sue for peace
Tacitus, <i>Hist</i> 4.50	2 nd c. A.D.	Account of Garamantian intervention in dispute between Oea and Lepcis and attack on lands and city of Lepcis. Devastate lands and lay siege to city, before arrival of Roman units puts them to flight. Garamantes described as indomitable people who given to brigandage (<i>gentem indomitam et inter accolae latrociniis fecundam</i>) Roman army recovers most booty apart from that portion dispersed to inaccessible hut villages
Marichal, <i>Ostraca</i> 28.2, 71.2, 72.1-2	3 rd c. A.D.	Roman soldiers from fort at Bu Njem (Gholaia) sent with Garamantes (to Fezzan?). Garamantes leading donkeys reported approaching fort at Bu Njem, with consignment of barley
Claudian, <i>Minor Poems</i> 28.20.23	4 th c. A.D.	Reference to unmastered Garamantes and Gyrrae who live in rocky caves, collect ebony and steal ivory tusks from elephants

Table 1. Some key source references to the Garamantes and their economic activity

From the tabulated data, we might reconstruct a society at a fairly low level of development, with an economy based mainly around pastoralism and brigandage (somewhat akin to the nomadic Tuareg of popular imagination in the 19th and 20th C). There are passing references to cultivation (even as early as Herodotus) and to date palms, and other allusions to salt, semi-precious gemstones, hunting of people and animals. But all this does not raise our expectations any higher than Wheeler's – when Roman material culture appears in the centre of the Sahara, it seems a casual product of the contact between a great empire and an impoverished and culturally dependent tribe.

An archaeological view of the Garamantes

Archaeology demonstrates that the period of the Garamantes (between 900 B.C. and A.D. 500) brought about a series of dramatic changes, though some of these were well in train before contact with the Roman world. Here we cannot review more than a few instances.

Were the Garamantes nomadic pastoralists?

The question is not about absolutes but one of primacy of alternative forms of exploitation. The Tuareg of the modern period are the modern epitome of Saharan nomads, though in fact they comprise both pastoral and agricultural groups within their confederation. It is no surprise that many people have identified the Garamantes as proto-Tuareg, since the Tuareg fit the assumed model derived from the ancient sources (the reputation for bellicosity not the least).²² However, the reality is that the Garamantes were fundamentally sedentary agriculturalists, with pastoralism consistently declining from about 1000 B.C. The remains of the great irrigation schemes constructed during the Garamantian heyday are an extraordinary testimony to this. The *foggaras* are underground channels, formed by connecting chains of vertical shafts at the base. The technology is from the near Eastern rather than the Mediterranean world and seems to have reached Fezzan via the Egyptian desert at some point in the 1st millennium B.C. Wheeler's assertion that they were a Roman 'import' must be rejected.²³ The *foggaras*, were a major landscape feature, with more than 650 now recorded (involving the digging of more than

²² L.C. Briggs, *Tribes of the Sahara* (Oxford 1960), 124-166 (esp. 165-166); J. Keenan, *The Tuareg. People of Ahaggar* (London 1977).

²³ Mattingly *et al.*, op.cit. (n.4), forthcoming, vol. 1; D.J. Mattingly, 'Twelve thousand years of human adaptation in Fezzan (Libyan Sahara)', in G. Barker & D. Gilbertson, eds., *The Archaeology of Drylands. Living at the margin* (London 2000), 160 ff.

100,000 shafts up to 40m deep and with the total combined length of the underground channels extending to several 1,000 km). Although such features are notoriously difficult to date, we are certain that they relate primarily to the Garamantian and early Islamic periods. They clearly facilitated large-scale and extensive cultivation of the valley floor oasis area. The picture is confirmed by botanical samples from Garamantian sites showing cultivation of wheat, barley, the grape vine and the date palm in irrigated conditions, from as early as the first half of the 1st millennium B.C.²⁴

Did the Garamantes live in tents, huts and caves?

The earliest archaeological researches on the Garamantes had identified 10,000s of burials spread all along the southern side of the 150km long depression that formed their heartlands. The settlement sites were much less clearcut, though the capital (ancient Garama) was identified at Jarma, where some Roman style stone buildings were known. This general lack of permanent settlements seemed rather to tie in with the idea of a tribe of nomadic pastoralists and does not seem to have disquieted the first researchers.²⁵

It is apparent that Garamantian society and culture did not suddenly appear fully formed in the Central Sahara. Rather it was the result of a long process of evolution across c.1500 years, which can be broken down into three broad phases of c.500 years. Settlements can be seen to evolve over time, but are essentially elaborate and permanently occupied from an early date.

The period from c. 1000-500 B.C. is the Early Garamantian phase, with its cultural roots in part in the Late Pastoral traditions of the 3rd-2nd millennia B.C. Settlements of this phase were sited on defensible bluffs of the escarpment edge of the Wadi al-Ajal, with the type site represented by Zinkekra.²⁶ At least 13 examples of hillforts or escarpment edge sites are now known in the Wadi al-Ajal area.

The first phase of occupation at Zinkekra ended around 500-400 B.C. at

²⁴ M. Van der Veen, 'Garamantian agriculture: the plant remains from Zinchebra, Fezzan', *Libyan Studies* 23 (1992), 7 ff.

²⁵ Pace *et al.* 1951, op cit. (n. 7), 190-198; C.M. Daniels, in *Libyan Studies* 20 (1989), 48-56 hinted at more widespread settlements; D. Mattingly, 'Garama', in R. Talbert, ed., *Barrington Atlas of the Greek and Roman World* (Princeton 2000), map 36 and Map-by-Map Directory 545-551 illustrates the bias towards funerary complexes in the archaeological record hitherto.

²⁶ C.M. Daniels, 'Garamantian excavations: Zinchebra 1965-1967', *Libya Antiqua* 5 (1968), 113 ff.; Idem, in *Libyan Studies* 20 (1989), 48-51.

which point it appears that an urban site originated in the valley centre at Jarma (ancient Garama), though Zinkekra also continued to be partly occupied and also took on a more 'urban' aspect. This period 500-1 B.C. may be characterised as the Garamantian proto-urban phase. Other nucleated valley sites also appeared.

Over time, Garama emerged as the Garamantian capital and in the Roman period, what we refer to as the Classic Garamantian phase A.D. 1-500, it was adorned with substantial public buildings and temples utilising stone on a scale and quality of dressing not previously witnessed (Fig. 2). Since there is no evidence to suggest a Roman occupation of Fezzan, these must be the result of contact, diplomacy and trade between the Roman empire and the Garamantian kingdom.²⁷

The evolved settlement pattern reflects the increasing localisation of farming activity in the oases along the base of the depression. In addition to the large urban centre at Garama, there were clearly a number of major settlements whose size and internal organisation would suggest an interpretation as towns. Qasr Ben Dourgba in the eastern Wadi al-Ajal is one clear example, as is Qasr ash-Sharaba in the Wadi Barjuj/'Utba area. It is now clear that the characteristic Garamantian settlement was a nucleated community located in the centre of the depressions where agriculture was practised. In addition to urban settlements, there were densely packed villages and hamlets all along the valley of the al-Ajal, to match the extensive evidence of cemeteries along the foot of the escarpment. The immediate hinterland of Jarma alone contains over 20 villages and the total for the al-Ajal in Garamantian times will almost certainly have exceeded 50.²⁸ It is almost certain that a similar pattern of settlements of Garamantian date existed in the other oasis areas of Fezzan (Fig. 3). Although much of Garamantian territory was waterless desert wastelands, the geographical reach of the kingdom extended along chains of oases across an area of c.250,000 sq km.

The origins of the characteristic nucleated sedentary settlements lie in the pre-Roman period, but there is no doubt that the precise form of architecture of the Classic Garamantian phase was influenced by the Mediterranean world.

²⁷ Excavations of these buildings, see M.S. Ayoub, *Excavations in Germa between 1962 and 1966* (Tripoli 1967), 23 ff.; Daniels 1971, op. cit. (n. 7), 264 f.

²⁸ Compare c.30 villages and hamlets of early modern date listed for the same area by J. Despois, *Mission scientifique du Fezzan (1944-1945) III: Géographie humaine* (Algiers 1946), 245-248.

Were the Garamantes a tribe?

'Tribe' seems an inadequate term to describe the evolutionary state of the Garamantes and the archaeological evidence strongly suggests that the Garamantes were a polity, with a distinctive material culture. They can be seen as a Saharan civilisation. For instance, a written script for the Libyan language was introduced in this period. Their society was hierarchical, with kings at the apex, and probably slave-using. Trade and political relations extended over long distances. The funerary evidence suggests that there was a massive demographic expansion to a level that was probably not equalled again until the last 40 years.²⁹ No reliable figures can be suggested for the total number of villages and towns, though the total seems certain to have by far exceeded the c.100 villages and hamlets of early modern times. Similarly, it is not unreasonable to suggest that at its peak the population of Garamantian Fezzan greatly exceeded the 33,500 recorded in the Italian 1936 census. A maximum figure in the range 50,000-100,000 is not implausible. All these factors indicate a society on a convergent course with a Mediterranean empire.

What was the nature of the Garamantian economy?

The economy of the ancient Fezzan was undoubtedly founded above all on agriculture and the foggaras indicate that this was a period of peak regional production. However, there is also ample evidence to show that the Garamantes were engaged in much more wide-ranging economic activity. Several of the surveyed settlement sites, in addition to excavations at Jarma and Saniat Jebbil, have yielded evidence of metallurgy, both ferrous and copper alloy. As yet there is no evidence of where the Garamantes carried out their primary smelting of iron, though that is likely to have been close to the major regional ore source in the Wadi ash-Shatti, an area as yet very poorly explored for its Garamantian remains. The copper source may well have been in West Africa, and, though there is some evidence of casting of small copper ingots at Jarma itself (ingot moulds were found in the 2001 excavations), this could simply be the result of resmelting of imported copper. Saniat Jebbil has been identified as a major centre of manufacturing activity, though similar processes were evidently carried out at many other sites. A large number of hearths have been identified from surface traces,

²⁹ C.M. Daniels, 'An ancient people of the Libyan Sahara', in J. & T. Bynon, eds., *Hamito-Semitic*. (The Hague 1975), 249 ff.; E.M. Ruprechtsberger, *Die Garamanten. Geschichte und Kultur eines libyschen Volkes in der Sahara* (Mainz 1997).

along with a crucible fragment and numerous off-cuts of copper alloy.³⁰ Preliminary analysis shows that both iron smithing and copper alloy working were being carried out in the same hearths. This conclusion is supported by analysis of finds of hearth bottoms and other metallurgical debris from my excavations at Jarma.

There is a mass of evidence for the working of semi-precious stones at Garamantian sites (again small quantities recovered by survey are put in perspective by huge numbers of fragments from excavations at Saniat Jebril and Jarma). The stones involved are the translucent red carnelian (known in the Roman sources as 'Garamantian carbuncles' or 'Carthaginian stones' – the latter reference suggests the trade route by which they first reached a Roman market!) and an opaque turquoise material commonly known as Amazonite (Fig. 4). The sources of these stones are still uncertain, though in view of the presence of abundant waste material at our excavated sites, they probably lay within Garamantian territory in the Fezzan region, rather than further afield. There was a well-established Saharan and sub-Saharan tradition of carnelian beadmaking from the latter millennia B.C., especially focused on the Western Sahara and the Niger area, but the evidence from Jarma appears to be separate from that. The most common local use appears to have been for bead production, though export of red carnelian for use as ring stones in the Roman world is a possibility. Flawed and broken half-finished beads in these stones attest to local production, as do the grooved stones, which were used to shape and polish both the semi-precious beads and ostrich eggshell beads. These 'bead polishers' have been recorded in very large numbers at Saniat Jebril, but are also attested at Jarma itself and several other settlements.

Glass beads are also frequent finds on Garamantian sites and there are hints at Saniat Jebril that glass working, at least for bead production, also took place there. There are major local sources of key materials used in glass production, such as the natron deposits of the lakes of the Edeyen Ubari, just to the north east of Jarma.³¹ There is abundant evidence for the local production of pottery, some of rather crude quality, but some wheel-made and/or finely decorated – once again demonstrating the relative sophistication of Garamantian control of pyrotechnic processes (Fig. 5).

Salt was another key commodity of the Sahara and several areas of Fezzan have notable areas of salt flats (*sabkha*). There is a particularly large

³⁰ Mattingly *et al.* 2001, *op. cit.* (n. 16), 143 f.

³¹ Despois 1946, *op. cit.* (n. 28), 180.

salt flat to the north and north east of Jarma itself and this area has produced vestigial traces of large embankments on the sabkha, perhaps created to enhance salt formation. Numerous ashy features identified as salt-making hearths have been located along the embankments and these are associated with abundant Garamantian period pottery. Non-metallic industrial residues, believed to relate to salt production, are common finds on Garamantian settlements near to areas of salt flat and are suggestive of large-scale and well-organised salt production.

There are hints in the ancient sources of the Garamantes trading in wild beasts (for the arenas of the Roman world) and in ivory.³² Articles made in ivory have been recovered at Jarma, notably bracelet fragments, confirming the local availability of the material and (probably) Garamantian working of it into artefacts. Similarly, several notable finds of gold artefacts by Ayoub in his Jarma excavations would seem to confirm the long-held suspicion that the Garamantes were also involved in trading gold across the Sahara.³³ The classical sources speak of the Garamantes hunting the *troglodytae* and 'Ethiopians', a strong hint of slave raiding against neighbouring peoples.³⁴ Although the selling-on of such captives northwards across the Sahara is unlikely to have been on a significant scale, it is evident from the large-scale nature of the intensive irrigated cultivation (and the dangerous task of foggara construction) that their own territory in Fezzan could have absorbed an almost unlimited numbers of slaves.

The precise nature of trans-Saharan trade at this date remains controversial, but the large quantities of Roman trade goods found at Garamantian sites and in their burials are unlikely to have arrived simply as gifts (Fig. 6). As I have outlined it is possible that the Garamantes traded in surplus agricultural produce, dates, salt, gold, semi-precious stones, manufactured jewellery and natron, with exotic wild beasts, ivory, ebony, and perhaps even slaves as other possibilities.³⁵ The creation of trans-Saharan trade pre-dated Rome's interventions (remember the 'Carthaginian stones' of the Garamantes), but there appears to have been a significant expansion in scale and a redirection of trade towards the cities of the

³² Ptolemy, *Geography* 1.8; Claudian, *Minor Poems*, 28.20.23; J. Desanges, *Recherches sur l'activité des Méditerranéens aux confins de l'Afrique*. CEFR. no 38 (Rome 1978), 197 ff.

³³ Ayoub 1967, op. cit. (n. 27), 28-38.

³⁴ Herodotus, *History*, 4.183; cf. Tacitus *Histories*. 4.50.

³⁵ On possible Garamantian commodities of trade, see Bovill op. cit. (n. 18), 40-42; Law, op. cit. (n. 18), 195-96. See also, R. Marichal, *Les ostraca du Bu Njem*. Libya Antiqua Suppl. 7 (Tripoli 1992), 109-111 on references to Garamantes trading and in contact with Roman frontier outposts to north of Fezzan.

Tripolitanian coast at the northern end of the shortest trans-Saharan routes.³⁶ The Garamantes appear to have been more active participants than sometimes given credit in the evolution of a manufacturing, trading and agricultural economy. That is not to claim that the Garamantian economy was outstandingly advanced for antiquity, simply that it fits in with a pattern of state formation and social evolution that was unlike anything seen hitherto in the Central Sahara. Whilst I hope to have demonstrated that these processes originated in pre-Roman times, I think it equally apparent that the existence of the Roman empire and its economic possibilities had a substantial impact in accelerating these processes.

In terms of its territorial extent, its settlement and population density and its socio-political organisation, the Garamantian kingdom was quite obviously a major force to be reckoned with in the Central Sahara. The settlement density, the number and scale of the cemeteries and the *foggara* systems all combine to highlight the Garamantian period as one of peak population and oasis cultivation. With these sort of demographic and economic resources it is easy to appreciate how the Garamantes could have dominated their neighbours. It is equally apparent, given the huge desert territory involved, why the Roman empire appears to have decided, after several forays into the Sahara, that it was better to deal with the Garamantian kingdom by diplomacy and trade contact than by attempted conquest and occupation. Trade was a bilateral relationship for two societies that were already on a course of convergence.³⁷ From the Garamantian perspective one may speculate that the economic attraction of the Roman empire accelerated the economic changes already in train in the central Sahara.

Leicester, November 2001

³⁶ A. di Vita, 'Gli Emporia di Tripolitania dall' età di Massinissa a Diocleziano: un profilo storico-istituzionale', *ANRW* II 10, 2 (Berlin/ New York 1982), 588-594 for a maximalist view of the importance of trans-Saharan trade in the Roman period. On the trade routes, see Thiry 195, op. cit. (n. 20), 399-448.

³⁷ Similar observations could also be made about Meroe and Aksum in East Africa, see Phillipson 1992, op. cit. (n. 2), 164-173.

Figure 3. Map of Fezzan, showing the three main bands of oases: in the north the Wadi ash-Shatti, in the centre the Wadi al-Ajal and in the south the Barjuj/Murzuq/Hufra depression. The outlying oases of Ghat and al-Qatrun/Tijirhi were probably also within the Garamantian territory.

Figure 4. Evidence of stone bead-making from Saniat Jibril, near Jarma. The amazonite beads (top right) have fractured during the drilling process, which is incomplete. The darker beads are of red carnelian.

Figure 5. Garamantian painted pottery (red on white/cream ground).

Figure 6. Imported Tunisian oil amphora from tomb in Jarma area.