# Tripolitania

David J. Mattingly

ROUTLEDGE

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*D.J.Mattingly*

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To Jenny
with love and thanks

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# ACKNOWLEDGEMENTS

This book is the product of many years' study of Roman Tripolitania, commencing with a Ph.D. thesis on the province that I completed in 1984. That it has taken me a further 10 years to revise, expand and develop the thesis into this book can be put down to many things: three job-changes (including a transAtlantic move and back again), making habitable several dilapidated houses, numerous switches in computer hardware and software, three children and my own widening research horizons can account for much of that! That it has got done at all I owe to a number of people who have given particular encouragement at vital stages. First mention must go to my Ph.D. supervisor, Barri Jones who introduced me to Roman Africa and who has contributed immensely to my understanding of the region and its archaeology. My father, Harold Mattingly, a wonderful source of knowledge and good sense about the ancient world, has been a much-valued sounding board for my ideas, and over the years has contributed innumerable helpful suggestions. A special word of thanks goes to Anthony Birley who, having read the entire thesis, first encouraged me to publish it with Batsford. The successive Batsford advisory editors for archaeology, Graham Webster and Michael Fulford have also been generous with their time and advice. A massive debt is owed to the patience and persistence of Peter Kemmis Betty who kept me going against all the odds, whilst always remaining sympathetic and polite in the face of several delays.

Parts of the work rely heavily on my knowledge of the pre-desert landscapes explored by the UNESCO Libyan Valleys Survey in which I participated from 1979–84, and I must thank the project's directors, Barri Jones and Graeme Barker, for their generosity in allowing me to refer freely to that material and to utilise a number of illustrations from the project archive. Sections of chapters 8, 10 and 11 are expanded and re-edited versions of text that was originally published as a single article in *Antiquités africaines* 23 (1987). I am grateful to the editorial board of that journal for permission to use the material in this way. The Society for Libyan Studies also gave permission for me to reproduce a small section from an article originally published by me in *Libyan Studies* 19 (1988) as part of chapter 7 and to reproduce a number of figures for which they had the copyright. Figures 6:1, 6:4, 6:6 and 6:8 were drawn for me by Alison Wilkins; figures 2:6, 2.13, 5:6 and 9:2 are the work of Debbie Miles, but most of the other figures and photographs are my own except where sources are acknowledged below. A general word of thanks is offered to all who have helped with providing illustrations or in giving copyright clearance. Specific acknowledgements are as follows: Figs 0:1, 4:2, from Barth 1857; Fig. 2:7, from Bates 1914; Fig. 2:10, from Jones and Barker 1980; Fig. 5:5, from Lyon 1821; Fig. 6:2, from Jones 1989b; Fig. 6:3, from Ward-Perkins 1993; Fig. 6:5, from Lezine 1972; Fig. 6:7, from Kenrick 1985c; Fig. 6:9, from Constans 1916; Figs 7:6, 7:11, 8:5, 11:2, from Jones 1985a; Fig. 7:10, from Hunt *et al.,* 1987; Figs 10:3, 10:4 from Buck, Burns and Mattingly 1983; Figs 10:5, 10:6, from Brogan and Smith 1985; Fig. 11.1, from Welsby 1992; Fig. 11:3 from Welsby 1991; Fig. 8:4 and Plates 2, 3, 6, 10, 11,

35, 38, 39, 41, 46, 47, 48, 52, 53, 54, 55, 56, 57, from the ULVS archive; Plate 5, from Charles Daniels; Plate 30, from Barri Jones; Plates 20, 59, 60, 61, from the Jamahiriya's Museum, Tripoli.

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## A NOTE ON THE TRANSLITERATION OF ARABIC PLACE NAMES

The different modern histories of Libya and Tunisia have resulted in rather diverse forms of transliterating modern place names from Arabic. The imposition of a single unitary scheme would have had obvious merits from the point of view of consistency, but would have rendered the names of many well-known sites almost unrecognizable. Accordingly I have generally kept French style transliteration for sites in Tunisia (e.g., Chott Djerid) and Italian style in Libya (Gebel Nefusa). By and large I have tried to render names of sites in the form in which they will be most familiar to modern students of the region (thus Bu Njem rather than Bu Ngem, since the site is now best known through the

publications of Rebuffat).

The use of the term Tripolitania in this book refers to the geographical area of northwest Libya and southeast Tunisia, whereas *Tripolitana* is used in reference to the mid-imperial *regio* (region) and the late Roman *provincia* (province).

# PREFACE

## 1
## THE HISTORICAL FRAMEWORK

The chronological limits of this study are, at one extreme, Caesar's victory at *Thapsus* which ended the civil war in Africa (46 BC) and, at the other, the conquest of North Africa by the Vandals (which was completed by AD 455). These are no more than convenient *termini* for the study of the Roman province and its frontier and there is, of course, much valuable information on political, military and socio-economic matters in sources on earlier and later periods, notably those relating to the Byzantine reconquest of the region. In the main, though, the discussion centres on the 500 years when the region known as the *Emporia* and later as *Tripolitana* was part of the Roman provinces of Africa. Although the province of *Tripolitana* was the product of Diocletian's reforms *c. AD* 303, the Tripolitanian region had always stood out from the rest of *Africa Proconsularis* and the title of this book requires no special pleading.[1]

The history of Tripolitania (below, chapters 3, 4 and 9) was closely linked to that of its main city, *Lepcis Magna.* The form *Lepcis,* used here in preference to the commonly encountered *Leptis,* is derived from the neo-Punic name *Lpqy,* indicating the Phoenician origin of the settlement. At its apogee *Lepcis Magna* was probably second only to Carthage among the cities of Roman Africa in terms of its size, wealth and munificence.[2] Though originally Phoenician settlements, the three towns, which were known corporately as the *Emporia* and later as the *Tripolis* (*Lepcis, Oea* and *Sabratha*), came under the controlling influence of Carthage in her heyday. The integration of Phoenician and Libyan ethnic groups probably began at an early date and was accompanied by agricultural development of a deep hinterland zone. Although the territory is notable for the marginality of its agriculture, it became one of the richest areas in early-mid imperial Africa.

## 2
## PREVIOUS WORK

The area of Roman Tripolitania is today split into two by the political division between northwest Libya and southern Tunisia. This has presented an obstacle to modern research, since most antiquarians and scholars have worked on only one side or the other of the modern frontier. A prime objective of this book is to reunite Tripolitania as a geographic entity and to study it as a single unit.

Interest in the Roman history of the region was largely quiescent until the early nineteenth century. Most of the first wave of Europeans to pass through Tripolitania from that date were explorers heading for the Fezzan and beyond, into the Sudan. Setting off

on their expeditions, their observations of the countryside and of archaeological features were often precise and enthusiastic (in contrast to the condensed accounts they gave of their return journeys when their senses had been dulled by malaria). Lyon (1818–20), Denham, Clapperton and Oudney (1822–4), Richardson (1845–6), Barth (1849–55), Duveyrier (1860), Nachtigal (1869) and others have left a rich archive of description and drawings, notably of sites close to the main caravan routes of eastern Tripolitania (Fig. 0:1).[3]

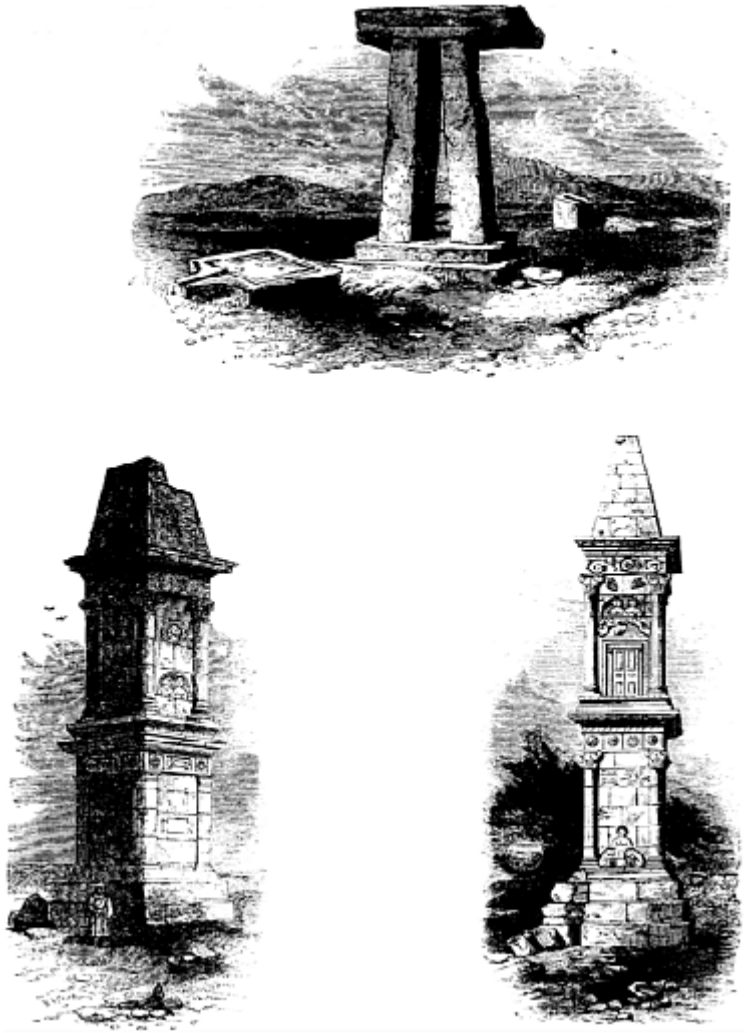

**Fig 0:1** Three Romano-Libyan monuments recorded by Barth in 1850s Tripolitania: a) olive press in the Gebel Tarhuna; b) obelisk mausoleum south of Mizda; c) obelisk mausoleum in the Wadi Tabuniya near Gheriat el-Garbia (from Barth 1857).

Commander Smythe had less ambitious exploration in mind when, in 1817, he made a brief journey into the interior to discover the 'lost city' of Ghirza, He was, however, profoundly disappointed and set the pattern for later archaeological work in the area by subsequently concentrating on exposing (and pilfering) columns and decorated marble at the coastal site of *Lepcis Magna.* Another early expedition was that of the Beechey brothers (1821–2), who followed the Syrtic coastal route from Tripoli to Cyrenaica.[4]

The French conquest of southern Tunisia in the 1880s had important repercussions for the study of that region. The cartographers of the 'brigades topographiques' and off-duty officers, aided by French antiquarians, began the first systematic mapping and study of ancient ruins, as well as carrying out excavations. Although of variable quality, judged by modern standards, this work constitutes a large and invaluable data-base. In Libya, meanwhile, access was made extremely difficult by the Turkish government of the region. Cowper (1895–6) and the Frenchman de Mathuisieulx (1901, 1902, 1904) were exceptions in being granted permisson to explore the Gebel region. Cowper's methodical study of the remains of olive presses is still of great value, despite the fact that he wrongly identified them as prehistoric megaliths.[5]

Italy's seizure of Libya in 1911 was followed by the first systematic archaeological excavations, though mainly concentrated on the coastal cities of *Lepcis Magna* and *Sabratha* and on rich villas, such as Zliten. Because of the unsettled nature of the Gebel and predesert hinterland for a protracted period after the initial Italian invasion, little work was carried out there. It was only in the 1930s that the conquest of Fezzan (southern Libya) was finally achieved, allowing major scientific and archaeological expeditions to be sent there.[6] Paradoxically, work in southern Tunisia had tailed off and comparatively little that was new was recorded between the 1930s and the 1960s. But in Libya, following the Second World War, the interim British Military Administration inaugurated a major programme of work on the interior of eastern Tripolitania under the direction of J.B.Ward-Perkins and R.G.Goodchild. Italian and British teams also continued to work on the major coastal sites. Since the independence of Libya in 1951, British, Italian and French teams have continued to work with the Libyan Department of Antiquities on a variety of projects.[7]

Since the 1960s both the Tunisian Institut National d'Art et Archéologie (now, du Patrimoine) and the Libyan Antiquities Department have been increasingly active in the field. In 1964 a small British expedition attempted to follow the Roman *limes* road through both Tunisia and Libya and in 1968 a joint Tunisian and French team inaugurated a phase of renewed fieldwork and publication, including Trousset's important thesis on the western *limes Tripolitanus.* The latest major international project in Libya has been that of the UNESCO Libyan Valleys Survey (hereafter ULVS), a joint Anglo-Libyan and Franco-Libyan venture. This has involved the detailed study of a considerable area of the pre-desert hinterland of eastern Tripolitania.[8]

The amount of material available is substantial and the quality of archaeological preservation at many sites would alone merit the present attempt at synthesis. This synthesis has of necessity also to draw on material from other parts of Roman Africa—for comparison, contrast and for the simple reason that Tripolitania, for much of its history, formed part of broad administrative arrangements that covered a large part of North Africa. This is not intended to be read, therefore, as a proxy history of Roman

Africa as seen from Tripolitania, but a study of the latter zone constructed upon my perception of some central themes in the history and archaeology of Roman Africa.

## 3
## CONCEPTUAL FRAMEWORK

### The conflict theory

A great deal has been written on Roman Africa starting from the assumption that there was always conflict between 'the desert and the sown', that is, between nomads and sedentary people. Such theories assert that the Romans expelled nomadic tribes from the cultivatable Tell and steppe-lands, forcing them back into the northern Sahara and constructing frontiers to prevent their re-entry into what rapidly became a zone of sedentary agriculture and civilization. The nomads established their dominance in the oases of the northern Sahara and, with the diffusion of the camel in the late Roman empire, were increasingly able to attack the Roman frontiers with impunity. Or so the theory asserts. Variants on this conflict theory have been applied to the study of mountain enclaves within the Roman provinces, such as the Great Kabylie range. Unsubdued nomadic tribes were allegedly penned up in such mountain 'reservations', from where they would break out periodically to pillage sedentary agricultural settlements. In spite of the questionable assumption that nomadic and sedentary people are necessarily antipathetic towards each other, such theories have dominated the literature for over 50 years. This is one of many instances of the Romano-African past being recreated in the light of twentieth-century European experience and aspirations in North Africa. My history of Roman Africa is not dominated by endemic warfare, nor do colonists from overseas feature as major actors.[9]

### The *limitanei* theory

This theory arose in response to the need for an explanation of the apparent growth in agricultural settlements at various points along the Roman frontiers in Africa. Carcopino first suggested that much of the new settlement might have been that of army veterans, designed to firm up the frontier zone. The whole case rests upon a possibly spurious reference to land allocation to frontier guards in the 'Life' of Severus Alexander and an entry in the Theodosian Code referring to lands held by a border militia. In consequence there has been a tendency to identify almost all better quality construction work in the frontier zone as being military or paramilitary in origin. The issue became much more complex when Goodchild adapted the idea and applied it to the evidence he had discovered in Libya in the 1940s. There, most of the fortified farms (or *gsur*) seemed to be of third century or later date. He argued that this was a clear vindication of the passage relating to Severus Alexander, and that the men who garrisoned these farms were border militia or *limitanei.* The use of the term *limitanei* was unfortunate as it is, in fact, incorrect in this context. Goodchild's theory has been further undermined by more recent work which has shown that there was extensive settlement in the region of earlier date.

Nonetheless it is still an influential hypothesis and one cannot disregard his evidence that some of the frontier settlements do appear to have had official connections just as some individuals bore official military titles (see below, chapter 10).[10]

### The minimalist approach

If Goodchild represents the maximalist point of view of Roman involvement in the frontier zones, then the opposite approach has also attracted interest.[11] This argues for minimal Roman influence on, or involvement in, the socio-economic development of the frontier zones. The majority of the *gsur* are to be interpreted as indigenous dwellings which had nothing to do with organized militia. The main problem with this approach, however, is one of terminology. How to define, for instance, what 'Roman influence' constituted in a region such as Tripolitania and how such influence was exerted both actively and passively? Only by studying the Roman and native interaction in the fullest possible detail can we strike a balance between these two opposed viewpoints. Although there is a great deal that should be described as 'Libyan' or 'African' rather than as 'Roman' in the frontier lands, these regions did not exist in a vacuum and were profoundly affected by imported political, social and economic developments.

The secondary literature on Roman Africa remains a minefield because of the significant role played by the successive conceptual *schema* in influencing interpretation. Whilst many historians and archaeologists of Roman North Africa have modified some of their views, away from the extreme positions of, for example, Gsell or Goodchild, the legacy of the earlier conceptual frameworks lingers on. It will become apparent in the pages to come that I reject the assumptions which underlie the 'conflict theory', and that the '*limitanei* theory' must be abandoned in the light of new evidence. And I have not followed the extreme post-colonial minimalists in shaping my picture of the past. In assembling the detailed evidence for the context and development of the region, some new approaches have emerged which, I hope, provide a valid and coherent alternative perspective. Nevertheless, a considerable debt is owed to the ideas of earlier scholars, who may be out of fashion now, but who were never entirely wrong.

## 4
## TOWARDS A PROVINCIAL CASE STUDY?

Studies of Roman provinces are sometimes constrained by the clichéd formula of the genre, producing a rather bland, stereotypical view of life in the Roman empire. Whilst it is impossible to subvert entirely the structure of such studies, as the chapter headings of this book will indicate, it is my intention to explore in greater detail a number of fundamental themes which differentiated Tripolitania from many other parts of Africa or the empire at large. First, there is the extraordinary and undeniable fact that, in *Lepcis Magna,* one of the least promising environments of the Mediterranean hosted one of the wealthiest Roman provincial towns. This is in part a question of geography (chapter 1) and in part one of politics and economics (chapters 3, 6, 7). The geographical peculiarities of the region are also of prime significance to explanations of its later

precipitate decline (chapters 9–12).

**Fig. 0:2** Roman Tripolitania. Map showing locations of principal sites named in the text. Open symbols indicate that the exact location is uncertain. Latin place names are given in italics, where these are reasonably well established; non-italic names are modern place names.

Rural economy and settlement trends provide the second major theme. The exploitation of the countryside, and in particular the evidence for massive olive cultivation, is a notable focus in the examination of the ancient economy of the zone and of the close links between town and country (chapter 7). The sedentarization of tribal groups from the pre-desert margins of the Sahara was an important side-effect of the economic and political incorporation of the region in the Roman empire, yet the settlement pattern that emerged was not static and there appear to have been important changes taking place in later antiquity (chapter 11).

The ethnic and cultural character of the people, dwellers in both town and country, is a third dominant theme (chapters 2, 3, 7, 8, 11, 12), particularly in view of the near total lack of evidence of colonization from outside the area during the Roman period. The fourth theme concerns the influence of the Roman frontier on the region. The coastal towns were highly civilized centres and by the first century AD were becoming well integrated into the Roman empire, but they were separated from the Saharan desert and 'another Africa' by only a thin stretch of territory. In consequence, I believe that military involvement in the region was more important than has normally been recognized and from an earlier date (chapters 3, 4, 5, 9, 10). A final aspect which will reappear at several points concerns the successful breakthrough of the regional elite into the central political structures of the Roman state. As we shall see, the elevation of L. Septimius Severus, a

citizen of *Lepcis,* as emperor at the close of the second century had profound implications for the region, further setting it apart from the rest of Roman Africa.

# 1
# GEOGRAPHY AND CLIMATE

## 1
## INTRODUCTION

Although Tripolitania *was* administered as part of *Africa Proconsularis* until the third century AD, there were sound geographical reasons for eventually differentiating it as a separate territory. The physical relief and climate of the region distinguish Tripolitania from Rome's other territories in North Africa. It stands apart as a hybrid between Mediterranean and Saharan zones, and may even be considered to lie outside the Maghreb proper, which is characterized by the Atlas mountains (Tell) and high plains (steppe). In terms of structure and climate Tripolitania is more immediately Saharan, although the long littoral imposes certain Mediterranean cli matic nuances.[1] The main ecological zones are well defined and have imposed the essential conditions and limitations of settlement in the region.

Early modern explorers noted with astonishment the extensive remains of ancient settlement in zones then almost devoid of population (Plate 1).[2] Similar observations were made in Tunisia, Algeria and Morocco and, perhaps inevitably, there was speculation that major climatic change had occurred in the post-classical period. Modern research, however, suggests that the ancient conditions were much the same as those of today and a good deal of information on the ancient environment can be assembled from a combination of ancient and modern sources. We shall first examine the meagre ancient sources and then consider the comparative value of studies of the modern geography, climate and ecology of the region.

## 2
## ANCIENT EVIDENCE FOR GEOGRAPHY, CLIMATE, FLORA AND FAUNA

The ancient sources relating to the geography and climate of North Africa are the starting point for this brief survey. It is self-evidently important to establish to what extent the ancient environment of Tripolitania was similar to and/or different from that of today.

As we shall see below, modern Tripolitania comprises three fundamental geographic zones: the coastal plain (known as the Gefara in the central sector), a curving chain of hills (the Gebel) and the predesert plateau beyond (Dahar) that shades off into the true desert. This tripartite division is echoed in a number of sources. Strabo describes mountains and plains lying between the coast and the *Garamantes,* and also mentions large lakes (chotts?) and 'rivers which sink beneath the earth and become invisible' (wadis). Pliny described the Gefara as a desert separating the *Emporia* from

*Africa Proconsularis,* which it certainly is in its central sector where movable sand dunes extend right up to the coast. South of there, he mentioned forests full of wild beasts, presumably a reference to the then wooded Gebel. Beyond was a desert and then came the land of the *Garamantes.* The sixth-century African poet Corippus gave vivid descriptions of a relatively arid Gefara, a wooded and populous Gebel and desolate desert lands of Dahar and Syrtica.[3]

More commonly Latin and Greek authors only had detailed information on coastal features and described desert lands of the interior without reference to the wooded and fertile Gebel. There are ample references to show that the desert regions had much the same character then as now. The oases of the Sahara are vividly described by Herodotus as spring mounds and by Lucan as isolated, spring-fed 'woods' within the desert. Cato's celebrated crossing of the Syrtic desert with an army of 10,000 in 48 BC was difficult to emulate, even for small groups or individuals, until the construction of the 'Littorea' road in the 1930s. The 'sweltering Syrtes' *(Syrtes…aestuoses)* of Horace and the 'burning sands of a thirsty land' *(calidas terrae sitientis harenas)* of Corippus were not the products of poetic exaggeration, as the number of other examples shows.[4]

Of the coastal features which are described, Strabo's account of the lake of *Zuchis* (Sebkha Taourgha) and the wooded *Cephalea* promontory (Ras Misurata) are particularly evocative. Similarly, Procopius' description of sand dunes covering part of *Lepcis Magna* at the time of the Byzantine reconquest is supported by archaeological evidence and the modern state of the site.

Several sources referred to the perils of navigation along the Syrtic coast. The lack of good anchorages, the unpredictable shallows and the wrecking activities of the coastal-dwelling *Nasamones* tribes all contributed to the number of lost ships and the bad reputation of the inshore waters. As Strabo observed, however, the wrecks were mainly the result of sailors being loath to lose touch with the shoreline in spite of the perils involved.

> The difficulty with this Syrtis and the Little Syrtis is that in many places their deep waters contain shallows and the result is, at the ebb and flow of the tides, that sailors sometimes fall into the shallows and stick there, and that the safe escape of a boat is rare. On this account sailors keep at a distance when voyaging along the coast, taking precautions not to be caught off guard and driven by winds into these gulfs. However, the disposition of man to take risks causes him to try anything in the world and particularly voyaging along coasts.

Sea traffic between Cyrenaica and Tripolitania was not entirely discouraged, but the greater volume of trade and shipping probably moved north and west of *Lepcis* to Carthage and Rome as a consequence.[5]

In spite of its reputation as one of the granaries of Rome, Africa was always a country of low rainfall and of few perennial springs, streams or rivers, a situation neatly summed up in Sallust's phrase, 'impoverished in water from sky and land' *(caelo terraque penuria aquarum).* Periods of drought and crop failures are attested in the sources and Hadrian's visit to Africa in AD 128 coincided with the end of a five-year drought Consequently he was highly esteemed in Africa afterwards.

Literary and archaeological evidence show that the rain which did fall was carefully utilized by the construction of control walls, dams, terraces and cisterns. Strabo described a 'Carthaginian wall' built in a wadi near *Lepcis,* and Frontinus described dam building as an 'African habit'. In another revealing passage, he contrasted Italian and African attitudes to flood water:

> In Italy a pretty big dispute may flare up in order to keep off flood water. But in Africa the same issue is handled quite differently. Since that is a very dry area, they have no dispute on this score unless someone has stopped rain water flowing on their land. They make embankments and catch and retain the rain water, so that it may be used on the spot rather than flow away.

The well-known *Lamasba* inscription, which gives details of the distribution of irrigation water to landholders, comes from a region of Algeria with over 400 mm rainfall (annual average). The fact that such measures were necessary because of a dispute between landholders over irrigation water, and in an area where commercial dry cultivation of cereals should have been possible in any case, implies that the pattern of rainfall was as unpredictable in the past as it is today. The archaeological remains of ancient hydraulic works are extensive, but much more detailed study is needed for us to understand all the different systems of water management.[6] The evidence seems, nevertheless, to suggest that Roman Africa developed agriculturally not as a result of higher rainfall, but through the careful control and management of the available water resources. Some regions were clearly worse off than others. Strabo described the Greater Syrtes coastline as 'destitute of water' and Africa in general as being like a leopard skin, with spots of dense habitation surrounded by desert. Sallust's description of a semi-arid zone around *Capsa* (Gafsa) also rings true of the steppe today. An inscription from Bu Njem exhorted the soldiers to relax in the baths away from the 'heat beating on these endless sands' and to enjoy a respite from 'the sun and fitful wind's scorching'. The latter remark is evidently a reference to the notorious hot desert wind *(ghibli)*, which is also noted in other sources.[7] The available evidence supports the view that rainfall in antiquity was neither abundant, nor reliable.

Referring to *Africa Vetus* and the Numidian kingdom, Sallust described the land as fertile and good for crops and pasture but with relatively few trees. It is likely that the eastern Maghreb was never as well afforested as the Great Atlas ranges further west. But Pliny and Strabo both attest woods and forest on the coast and in the Gebel in Tripolitania. The cultivation of extensive 'forests' of olive trees began at an early date and Pliny was referring snobbishly to quality, and not to quantity, when he said that Africa was not noted for its wine and oil, but only its grain. As observed already, Tripolitania is not suited for commercial cereal cultivation and it is significant that the cash crop *par excellence* in antiquity, as today, was the olive. Although olive cultivation extended well beyond the region now considered economically viable, the evidence again indicates better water management rather than climatic change as the main factor. There is evidence for a wide variety of other fruit trees in Africa and Tripolitania in the Roman period: peaches, pomegranates, nectarines, plums, apples, jujubes, pears, figs (highly rated by Pliny), vines, almonds, pistachios, carobs. The once celebrated lotus tree evidently diminished in importance with the spread of arboriculture in the favoured areas

of the coastal plain and Arab folklore remembered a time when Tripoli's orchards ('forest') extended to the Gebel. Evidence for modern cultivation will be discussed below.

Relief carvings from mausolea in Tunisia and Libya and mosaics from *Lepcis* and Zliten illustrate agricultural activities in the region (Plates 59–61). These confirm that, in spite of the low rainfall, cereals were cultivated as a dietary staple. Documentary records from the Roman fort at Bu Njem show that it was supplied with grain and olive oil by small scale cultivators of the pre-desert.[8]

Current research in the Sofeggin and Zem-Zem has produced a wealth of new environmental evidence from ancient middens, from which a detailed picture of the flora is now emerging. Preliminary results show a remarkable range of crops and plants for such a marginal zone (Table 1:1), although it is paralleled by the surviving cultivation at Beni Ulid and from a similar area of the Negev desert in Palestine. It is particularly interesting to note that the list of wild plants (that is the 'natural vegetation') indicates a dry or arid-zone environment much as today. The cultivation of olives, cereals and so on can be related to the archaeological evidence for the development of a runoff farming technology.

The cultivation of date palms and other crops in the oases of the northern Sahara is also attested by the ancient sources. Archaeological survey and excavation in Fezzan has corroborated this. The palaeobotanical samples obtained from the Garamantian hillfort of Zinchecra are particularly important in attesting the early cultivation of bread wheats, along-side date palms and a range of other irrigated crops. Palms were used extensively in construction work in both fort and *vicus* at Bu Njem.[9]

**Table 1:1.** Evidence for Roman period cultivated and wild plants from the Sofeggin and Zem-Zem area (data from Ghirza, the ULVS (van der Veen 1981; 1985a/b) and personal observation (of timber samples)). Key to water dependency ratings: IR=irrigated conditions needed; WD=water dependent; WD*=water dependent, but some drought resistance; DR= drought resistant.

| Cultivated Plants | Rating | Timber Samples | Rating | Wild Plants | Rating |
|---|---|---|---|---|---|
| Barley | WD* | Olive | WD* | Emex spinosa | DR |
| Wheat | WD | Bamboo | IR | Zizyphus sp. | DR |
| Olives | WD* | Palm | IR | Medicago sp. | DR |
| Grapes | WD | Tamarisk | DR | Chenopodium sp. | DR |
| Figs | WD | Acacia | DR | Caryophylaceae | DR |
| Dates | IR | | | Malva sp. | DR |
| Almonds | WD* | | | Chrysanthemum sp. | DR |
| Pulses (peas, lentils) | WD | | | Polygonum sp. | DR |
| Water Melon | IR | | | cf. Galium sp. | DR |

| | | | | | |
|---|---|---|---|---|---|
| | | | | cf. Cruciferae | DR |
| | | | | cf. Bromus | DR |
| | | | | Fumaria | DR |
| | | | | Anchusa officinalis | DR |
| | | | | cf. Compositae | DR |
| | | | | Spergula cf. arvensis | DR |
| | | | | Avena fatua | DR |

**Table 1:2.** Wild and domesticated animals attested in Tripolitania and the northern Sahara in antiquity (this is not intended to be comprehensive. The * denote species now extinct in the region).

| Animal | Extinct | Ancient sources | Iconographic/faunal evidence |
|---|---|---|---|
| Donkey | | Plutarch *Cato Y, 56* | Barker and Jones 1982 |
| Horse | | Strabo 17.3.6 | Barker and Jones 1982 |
| Camel | | Marichal 1979 | Demougeot 1960; Brogan 1955; Clarke 1986 |
| Cattle | | Herodotus 4.183, | |
| | | Strabo 17.3.19 | Barker 1986 |
| Sheep | | Strabo 17.3.19 | Brogan 1965a; Clarke 1986 |
| Goat | | Strabo 17.3.19 | Clarke 1986 |
| Elephant | * | Pliny 5.26; 8.32 | Bovey 1979; Churcher 1980 |
| Ostrich | * | Synesius *Letter* 134 | Paradisi 1963; Rebuffat 1969; |
| | | | Saladin 1902 |
| Gazelle | | | Churcher 1980; Clarke 1986 |
| Giraffe | * | Pliny 8.69 | Barker 1986; Paradisi 1963; de Mathuisieulx 1904 |
| Rhinoceros | * | | Bovey 1979; Churcher 1980 |
| Auroch | * | | Churcher 1980 |
| Antelope | * | Pliny 10.201 | Saladin 1902 |
| Wildcat | | | Saladin 1902 |
| Leopard | * | Pliny 10.202 | Ward-Perkins and Toynbee 1949 |
| Panther | * | Pliny 8.62 | |
| Wolf | * | Pliny 8.80 | |
| Hyena | | Pliny 8.108 | |
| Jackal | | Pliny 8.108 | |

| | | | |
|---|---|---|---|
| Lion | * | Lucan 9.941–47 | Aurigemma 1926 |
| Porcupine | | Pliny 8.53 | |
| Wild ass | * | Pliny 8.16 | |
| Hartebeast | * | | Bovey 1979 |
| Buffalo | * | | Bovey 1979 |
| Wild boar | * | | Aurigemma 1926 |
| Hunting dog | | Pliny 8.143 | |
| Rabbit | | | Saladin 1902 |
| Snake | | Diodorus 3.50.2; | |
| | | Lucan 9.710; | |
| | | Lucian *de dips* | |
| Scorpion | | Strabo 17.3.11 | |

The faunal record in antiquity reveals a decline in wildlife numbers and species from late prehistoric times onwards. Cave paintings and rock carvings from the north and central Sahara show that at one time it was much less arid than today. The spread of desert necessitated a northward or southward movement of many species and many of those that remained north of the desert in Tripolitania and Maghreb have died out through overkill by man, rather than for climatic reasons (Table 1:2). North Africa was one of the main hunting grounds for the animal displays *(venationes)* in amphitheatres around the Roman empire. Several early sources refer to a Tripolitanian 'wild beast zone' and Pliny specifically mentions elephants in the hinterland of the *Emporia.* The elephant was, moreover, one of the civic symbols of *Lepcis* and of *Sabratha,* perhaps indicating a connection with the trade in wild beasts.

The expansion of agriculture in the Roman period was achieved at the expense of potential predators or competitors in the 'wild beast zone'.[10] The lion survived in the Moroccan Atlas until 1922, the auroch until the 1940s and the ostrich is also recently extinct. Many other species such as the rhinoceros, giraffe and elephant were probably already hunted to the point of extinction during the Roman period.

There is now some information on the pastoral economy of ancient farmers in the Tripolitanian predesert zone. The results of faunal analysis of material collected by the ULVS, though based on a small sample, are illuminating. Of 4,225 large mammal bones recovered from midden sampling and small-scale excavation, 1,070 were identifiable to species. No less than 721 were sheep or goat bones, with 200 gazelle (196 from a single site), 40 camel, 30 pig, 29 bovid, 13 canid, 11 equid, 7 human, 2 antelope, 1 cat. On Roman period sites, the vast majority of the sheep/goats were killed in their second year of life, indicating that their primary exploitation was for meat. The unusual concentration of gazelle bones at one site close to the limits of settled agriculture illustrates the way that hunting could supplement the diet of farm-raised meat. On all the sites examined, spanning the Roman and medieval periods, sheep and goat herding was the most

intensive form of stock-raising activity.

Of the domestic animals, the long-horned cattle have subsequently died out, but the modern descendants of the stocky, long-necked horses, of the sheep, goats and camels can still be seen today. As with the flora, the basic conditions of the country do not appear to have changed significantly and one must look for reasons other than climatic change for the denudation of once wooded and fertile land and the extinction of entire species of wildlife.[11]

The overall picture from the literary sources is thin, but consistent in portraying Tripolitania as a comparatively arid zone with a mixture of Mediterranean and Saharan characteristics. A deeper understanding of the ancient topography, climate, flora and fauna must depend on modern sources of data and on our judgement of whether or not there has been significant climatic change since the Roman period.

## 3
## PHYSICAL GEOGRAPHY

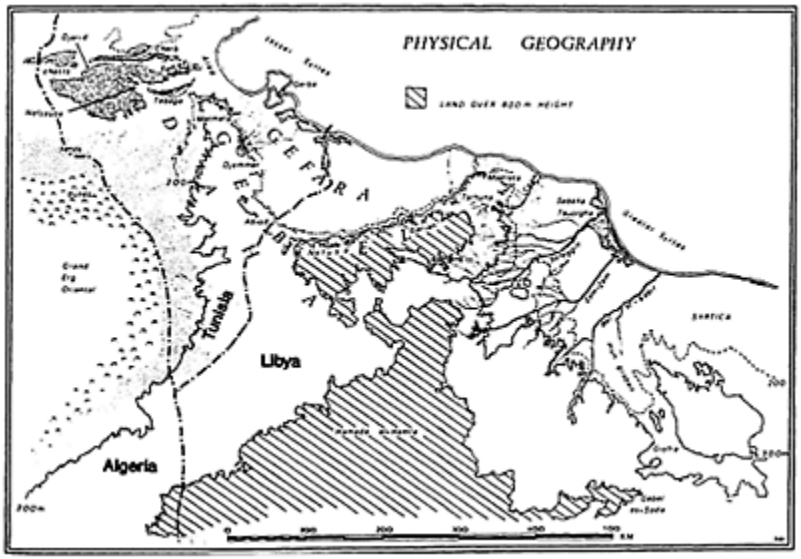


**Fig 1:1** The physical geography of Tripolitania and modern political boundaries.

Because of the accident of modern political geography, recent works tend to deal either with southern Tunisia alone or with northwest Libya. The region which is more properly defined as Tripolitania in the ancient sense extended from *Tacapae* (Gabes) to *Arae Philaenorum* (Ras el-Aàli) and covered approximately 175,000 square kilometres.[12] The greater part of this is technically pre-desert (true desert lands were excluded from the calculation) and in its wider context Tripolitania may be considered as essentially Saharan. Figures for modern Libya as a whole show that only 9 per cent of the land mass

is not desert, and only 3 per cent is used for agriculture.[13] Broadly speaking, the same pattern is true for Roman Tripolitania; there was a restricted, fertile margin near the coast and a vast desert hinterland. If this Saharan hinterland, including Fezzan, is added to the calculation of size, one is dealing with an area in the order of 610,000 square kilometres. Thus Tripolitania is far more closely linked to the Sahara by climate, relief and physical proximity than most regions of the Maghreb.

At its simplest level, the geography of Tripolitania consists of three main zones (Fig.1:1). A broad coastal plain (the Gefara) runs from east of Tripoli *(Oea)* to the gulf of Bou-Ghara *(Gigthis),* where it merges with the coastal plain of the Gabes region (the Arad). A narrow extension of the coastal plain runs eastwards from *Lepcis* around the Syrtic gulf. To the south of the Gefara and curving in a great arc towards Homs *(Lepcis Magna)* at one extreme and Gabes at the other is the mountainous escarpment of the Gebel. To the south, the Gebel merges gradually into the Saharan plateau (the Dahar). As we shall see, however, there are important local variations even within these broad categories and a number of other quite distinct physical zones must also be considered.[14]

## The Gebel

Together, the Gebel, Gefara and Dahar once constituted a ‘dome’ of Jurassic and Cretaceous strata (limestones, dolomites, marls and clays). The collapse of the central region created the Gefara basin and the cliff-like face of much of the Gebel along the faulting. Later erosion of the uplifted Gebel has created several contiguous hill groups which are separately referred to as the Gebel Matmata and the Gebel Demmer (Tunisia), the Gebel Nefusa, Gebel Garian, Gebel Tarhuna and Gebel Msellata (Libya).[15] From a minimum width of about 10 km, the Gebel is normally a band of hills about 20–25 km wide. To the south it merges with the Dahar, which emphasizes the essentially Saharan nature of the formation. Its physical characteristics vary considerably between sectors. The highest portion is the Gebel Nefusa/Garian region which attains 800 m plus, whilst those of Tarhuna, Matmata and Demmer rarely reach 500 m.[16] The northern cliff escarpment is also most pronounced in the central section from Nalut to Garian, with access on to the plateau limited to a few routes, following deeply incised wadi beds. In the Libyan sectors generally, it is possible to move parallel to the scarp edge along the undulating plateau. But in the Gebel Demmer the eroded scarp edge is so broken up that movement is restricted either to the foothills or to the Dahar. In some areas lateral movement from the Dahar through the Gebel and into the Gefara is also limited to ‘passages obliges’.

South of Garian the limestone plateau is overlain by extensive basalt flows, which are probably late Pliocene or Pleistocene in date. Except in the region of these flows, soils are normally wind-deposited and loess-like, deriving from the limestone plateau. On Garian the soil cover is up to 10 m thick in places. Angular quartz grains coated with a thin film of iron oxide give these soils a characteristic red colour.[17]

## The Gefara

The Gefara is the collapsed centre of a Mesozoic anticline. Erosion of the Gebel in the

Miocene and later has produced considerable aggradation of parts of the Gefara plain. More recent Quaternary erosion and deposition has been concentrated in the wadi beds which cross the Gefara plain to the sea. Even today, alluvium is being redeposited in places. At the apex of its arc the Gefara is about 150 km wide and east to west along the coast it extends for over 350 km. The character of this relatively flat plain varies markedly between its extremities and its centre and between the coast and the interior. A large portion of it is technically desert. Setting out for Ghadames in 1848, Richardson was surprised to find that 'the desert reaches to the walls of the city of Tripoli'. Although some of the dune fields are of relatively recent origin, wind-blown sand was also a problem in the coastal plain in antiquity. The eastern Gefara south of Tripoli and the western Gefara south of Bou-Ghara *(Gigthis)* are comparatively well-watered zones, however, as is a narrow strip at the foot of the Gebel. A band of oases along the coast have helped make that a preferred zone of settlement as well. It is incorrect, therefore, to describe the Gefara as entirely arid steppe-lands, but neither should it be assumed to have once all been fertile. The coastal region is the most densely settled part on account of its subterranean aquifers and oases. The chain of oases from Tagiura to Gabes is only broken up by some extensive areas of sebkha near the Tuniso/Libyan border.[18]

## The Dahar

The Saharan plateau or Dahar extends up to the Gebel escarpment and it is primarily climatic differences that demarcate them as separate zones. To the southwest the Dahar slopes off into the Great Eastern Erg (see below), to the south it runs into the foot of the Hamada el Hamra and to the southeast it is dissected by the great wadi basin of Sofeggin, Zem-Zem and Bei el-Kebir. This latter zone is marginally less arid than the two former, though none of them is as wellwatered as the Gebel (see below).

This Mesozoic plateau formation has been deeply eroded at its eastern extremity by substantial water courses during the Quaternary age. Following initial down-cutting into the limestone strata, soil deposition has occurred and, in spite of the low rainfall, cultivation is possible in the Sofeggin and Zem-Zem wadi systems. But elsewhere the desert character of the Dahar is much more strongly pronounced. The major limiting factor to movement in the Dahar has nothing to do with relief, though; it is the availability of water which dictates settlement and land use in this transitional, pre-desert zone.[19]

## Chotts, Erg and Hamada

The north-western limits of Tripolitania are sharply defined by the Chott Djerid and its eastward continuation Chott Fedjedj. These chotts (more correctly sebkhas–seasonal lakes/salt flats) are vast inland drainage basins formed by the Tertiary faulting of the Atlas formation. The cliff-like Gebel Tebaga and Cherb ranges were the uplifted results of the same incident. The presence of the seasonal lakes and these abrupt mountain barriers imposes limitations on movement between Tripolitania and the rest of northwest Africa. South and south west of the Chott Djerid extends the Great Eastern Erg or sand sea which was practically impassable until modern times. Movement east to west,

therefore, is restricted to the far south (Tibesti and Hoggar) or the ‘passages obliges’ of the Djerid and Arad. For precisely this reason the Axis powers chose the Gabes coastal plain as their main line of defence against the advancing British in the 1940s. This strategic bottle-neck between Tripolitania and the rest of Roman Africa was made doubly important by the existence around the Chott Djerid of two major groups of oases, the Nefzaoua to the south and the Djerid to the north. Only those of the Nefzaoua fall within the geographical zone of Tripolitania, but their links with those of the Djerid (on the northwest side of the Chott) were probably close.[20]

The Saharan character of the Dahar is also reinforced by the imposing form of the Hamada elHamra, which separates Tripolitania from Fezzan. This Palaeocene limestone cap, on cretaceous limestone strata, has a reddish-brown tint from which its Arabic name (the Red Desert) is derived. Approached from the north it presents an 80–100 m scarp and in places attains over 900 m in height. Although there are some fine red soils in depressions, the Hamada is a rock desert feature and is almost entirely waterless and barren.[21] To the east of the Hamada lies the basalt extrusion known as the Gebel es-Soda (Black Mountain), which is interposed between the oases of Giofra and Fezzan.

## Syrtica and the Hun graben

The Sofeggin, Zem-Zem and Kebir wadi systems, descending from the Dahar, enter the Syrtic coastal plain which extends from Misurata to *Arae Philaenorum* (Ras el-Aàli). The geology is mainly Tertiary (Palaeocene and Miocene) with extensive faulting aligned northwest to southeast. The most important of these fault lines is the Hun-Waddan graben (210 km long, about 25 km wide) which runs from the Bei el-Kebir to the oases of Giofra (Hun, Waddan and Socna). This natural corridor is one of the most important routes between the coast and Fezzan. It is also the area of Tripolitania most susceptible to seismic activity in recent times.

Further east the interior consists of a limestone plateau of Tertiary date, whilst the coastal formations are of the Quaternary age. The area is almost entirely desert in character but the wadi beds contain limited areas of fertile alluvium. The western Syrtic coast is notable for the Sebkha Tauorgha, a seasonal lake (110 by 30 km) into which the wadis Sofeggin and ZemZem empty. In antiquity, there was apparently an unsilted exit from the lake into the sea.[22]

## The Sahara (including Fezzan)

Some of the Saharan landforms have already been alluded to. The northern limit of the Sahara is conventionally defined as the zone of extension of date palm cultivation producing dates for consumption. Under this definition the whole of Tripolitania lies within the Sahara since dates are grown for food in the coastal oases from Misurata to Gabes, though they are not of high quality because of the relative humidity. It is not always appreciated that only one fifth of the Sahara is sand desert and only one fifteenth covered by dunefields. The stone plateaux of Dahar, Syrtica and the Hamada el-Hamra are structurally typical of much of the Sahara. The lifting and faulting of the region, in part relating to the period of the Atlas formation, brought artesian nappes to the surface

and permitted the development of the characteristic oases of the zone. Between the Hamada el-Hamra and the Great Erg, barren sand and stone desert are alleviated by the few oases of Ghadames, Derj and Sinawen (the latter memorably described by Richardson as 'but a handful of date trees thrown upon the wide waste of the Sahara')- To the east of the Hamada, the Giofra, Zella and Augila oases are links in a chain of oases stretching to the Nile (Fig. 1:2). North/south routes from the coast to Fezzan incorporate the oases of Mizda, Bu Njem and Gheriat el-Garbia *inter alia.* Whilst the oases of the Nefzaoua occupy the key strategic position defining the western/northwestern limits of Tripolitania, the southern and eastern limits were less precise.

South of the Hamada el-Hamra and sandwiched between the Edri and Murzuk sand seas there are three roughly parallel bands of oases, known collectively as Fezzan. These oases formed the heartlands of one of the most formidable Libyan tribes, the *Garamantes* (chapter 2). These oases are of particular importance in that they lie astride the key north/ south trans-Saharan routes as well as linking with the east/west chain that bestraddles the northern Sahara.[23]

## 4
## CLIMATE

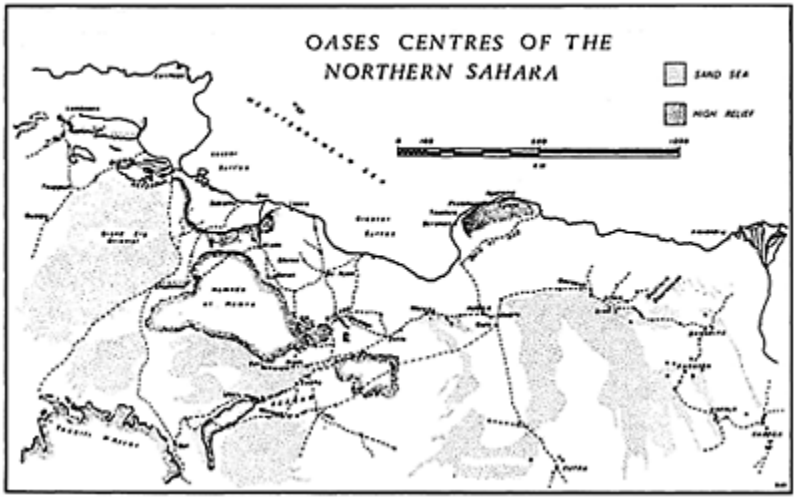


**Fig. 1:2** The major routes and principal oases of the northern Sahara.

According to Jean Despois, climate is the most important geographical factor in North Africa and rainfall is the most significant of the climatic variables. The rainfall isohyet map is useful as an indicator of where the desert begins (Fig. 1:3).[24]The differences between the North African frontier environments is nowhere clearer. In *Mauretania Tingitana,* the most southerly Roman forts lay in a region receiving 400–600 mm per year. In *Caesariensis,* the Severan frontier (*limes*) also followed this high rainfall band.

The *Legio III Augusta* was located at *Lambaesis* in *Numidia* in a 400 mm plus zone. Only in the vicinity of the wadi Djedi and in the *Ad Maiores/Capsa/Tacapae* sector was the Numidian *limes* in a region receiving under 200 mm per year. In stark contrast the Severan frontier zone in Tripolitania lay almost entirely south of the 100 mm isohyet (with the exception of a few Gebel road-stations) (see Fig. 4:4).

Apart from a small section of the eastern Gebel and the coast between Tripoli and Homs which receive an annual average over 300 mm, Tripolitania is poorly served by its rainfall (Fig. 1:3). In agricultural terms, there are no locations suitable for largescale commercial cereal production (requiring 400 mm per year or more) and about half the Gebel does not even receive the 200 mm theoretically necessary for dry cultivation of cereals. Figures for eastern Tripolitania alone, the most fertile region, show that only 3.6 per cent of the total landmass receives over 250 mm rainfall and only 7.8 per cent over 200 mm annual average. Over 67 per cent receives less than 50 mm per year and over 80 per cent under 100 mm (Table 1:3). Dry cultivation of olives is reckoned to require a minimum of 150 mm rainfall per year, so according to these figures 88.2 per cent of eastern Tripolitania lies outside this limit.[25]

**Table 1:3.** Analysis of relationship between rainfall figures and land area in Eastern Tripolitania (northwest Libya). (Data from Polservice 1980, B-6.)

| Average Annual Rainfall (mm) | Area (sq. km) | % of total landmass |
|---|---|---|
| 50 or less | 151, 700 | 67.3% |
| 51–100 | 30,000 | 13.3% |
| 101–150 | 17,000 | 7.6% |
| 151–200 | 9,000 | 4.0% |
| 201–250 | 9,400 | 4.2% |
| 251 and above | 8,200 | 3.6% |
| | 225, 300 | 100.0% |

**Table 1:4.** Annual average rainfall figures (in mm) for Tripolitania and used in conjunction with Figure 1:3—selected neighbouring locations (to be the * indicate sites beyond the southern and eastern limits of that map). Where available, maximum and minimum recorded figures are also given.

| Name (and Number on Fig.1.3) | Average (mm) | Max. (mm) | Min. (mm) | Location |
|---|---|---|---|---|
| 1. Zuara | 214 | 750 | – | coastal plain |
| 2. Tripoli | 340 | 750 | 160 | coastal plain |
| 3. Homs | 265 | – | – | coastal plain |

| | | | | |
|---|---|---|---|---|
| 4. Misurata | 253 | 433 | 77 | coastal plain |
| 5. Sirte | 180 | – | – | Syrtic coast |
| 6. Azizia | 211 | 469 | 83 | Eastern Gefara plain |
| 7.Tigi | 140 | – | – | Southern Gef fara plain |
| 8. Cussabat | 325 | – | – | Eastern Gebel |
| 9. Tarhuna | 273 | – | – | Eastern Gebel |
| 10. Garian | 336 | 510 | 64 | Central Gebel |
| 11. Jefren | 241 | 449 | 50 | Central Gebel |
| 12. Zintan | 170 | – | – | Central Gebel |
| 13. Nalut | 129 | 586 | 41 | Central Gebel |
| 14. Mizda | 63 | 234 | 11 | Upper Wadi Sofeggin |
| 15. Beni Ulid | 61 | 200 | 92 | Middle Wadi Sofeggin |
| 16. Shwerif | 45 | 146 | 13 | Upper Wadi Bei el Kebir |
| 17. Gheriat esh Shergia | 49 | 133 | 7 | Upper Wadi Zem-Zem |
| 18. Gerba | 207 | – | – | Lesser Syrtes island |
| 19. Gabes | 138 | – | – | Lesser Syrtes coast |
| 20. Medenine | 141 | – | – | Western Gefara plain |
| 21. Ben Gardane | 181 | – | – | Western Gefara plain |
| 22. Foum Tatahouine | 123 | – | – | Western Gebel |
| 23. Matmata | 243 | – | – | Western Gebel |
| 24. Kebili | 86 | – | – | Nefzaoua oasis |
| 25. Tozeur | 99 | – | – | Djerid oasis |
| 26. Gafsa | 179 | – | – | Steppe to north of Chott Djerid |
| 27. Hun | 32 | – | – | Giofra oasis |
| * Sebha | 10 | 30 | 0 | Fezzan oasis |
| * Murzuk | 8 | 31 | 0 | Fezzan oasis |
| * Brak | 10 | 19 | 0 | Fezzan oasis |
| * Gat | 13 | 38 | 0.1 | Oasis to southwest of Fezzan |
| * Augila | 11 | 42 | 0.2 | Oasis to southeast of Syrtica |
| * Kufra | 1 | – | – | Oasis in southern Libyan desert |

Table 1:4 above and Figure 1:3 illustrate the distribution of rainfall.[26] The eastern Gebel from Garian to Cussabat (Msellata) and the coastal region between Tripoli and Homs (*Oea* and *Lepcis*) are the most favoured regions. In the Dahar, rainfall falls away rapidly to the south and the Sofeggin and Zem-Zem basins lie in a zone with a range from only 50–100 mm annually.

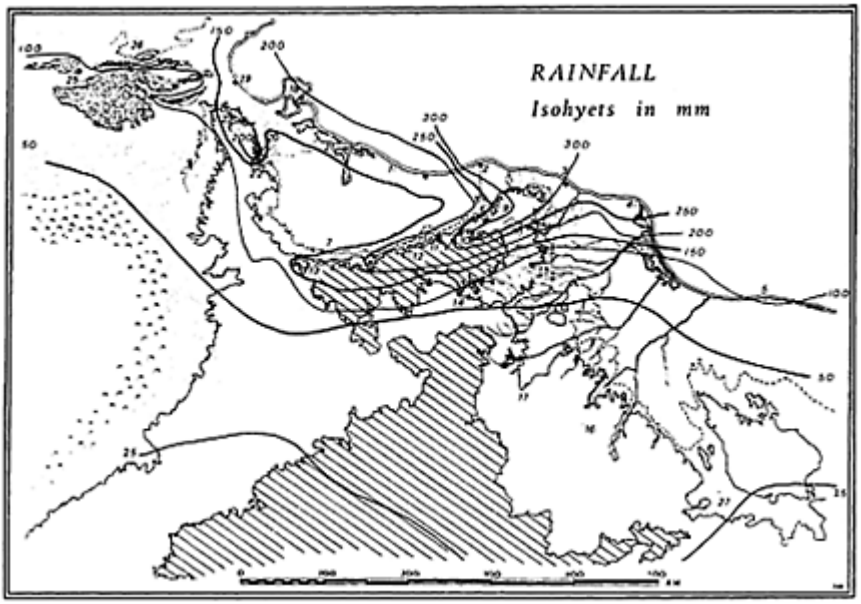


**Fig. 1:3** Rainfall isohyet map for Tripolitania. Numbered sites refer to locations listed in Tables 1:4 and 1:6.

The western Gebel (with the exception of the Matmata region) lies in a rain-shadow area and receives under 150 mm per year, as does a vast area of the Gefara plain. Only at the western and eastern extremities do the wadis carry flood water to the sea following rains. South of Ghadames and the oases of the Giofra, rainfall drops rapidly below the 25 mm mark and Fezzan receives less than 10 mm.

These annual averages, however, mask two critical variables. The chief problem with the rainfall in North Africa is that it is extremely erratic in its distribution from year to year and within any one year. The maximum and minimum values indicate massive devia tion from the 'norm' between years of dearth and years of plenty, as in the extreme case of Nalut: annual average 129 mm, maximum recorded 568 mm, minimum 41 mm. Even the better-watered areas reveal the same wild fluctuation as, for instance, Tripoli (340 mm, 750 mm, 160 mm) and Garian (336 mm, 510 mm and 64 mm).

**Table 1:5.** Rainfall at Garian 1926–1947 (in mm). Numbers in bold indicate figures below the monthly/annual averages, drought years are thus shown by runs of bold figures in autumn or spring. Summer rainfall (April-August) is not included, but since it averaged only 30 mm for the period, total average annual rainfall equalled 349 mm (Source: BMA 1947, 73)

| **Year** | **January** | **February** | **March** | **September** | **October** | **November** | **December** | **Total excl. summer** |
|---|---|---|---|---|---|---|---|---|
| 1926 | 176 | 133 | 65 | 10 | 0.1 | 1 | 44 | 438 |
| 1927 | 71 | 26 | 79 | 10 | 3 | 0 | 0 | 18 |
| 1928 | 97 | 80 | 93 | 4 | 3 | 86 | 56 | 457 |
| 1929 | 146 | 103 | 35 | 29 | 16 | 26 | 130 | 447 |
| 1930 | 29 | 44 | 34 | 0 | 35 | 36 | 44 | 221 |
| 1931 | 63 | 54 | 0 | 29 | 18 | 9 | 75 | 248 |
| 1932 | 183 | 34 | 61 | 18 | 58 | 91 | 58 | 503 |
| 1933 | 61 | 153 | 101 | 0 | 0 | 32 | 110 | 456 |
| 1934 | 165 | 72 | 19 | 12 | 52 | 31 | 46 | 396 |
| 1935 | 49 | 16 | 72 | 29 | 6 | 19 | 2 | 192 |
| 1936 | 49 | 3 | 3 | 0 | 9 | 28 | 110 | 202 |
| 1937 | 60 | 64 | 7 | 15 | 43 | 20 | 17 | 225 |
| 1938 | 133 | 80 | 101 | 0.2 | 8 | 69 | 81 | 473 |
| 1939 | 81 | 74 | 29 | 29 | 1 | 23 | 30 | 268 |
| 1940 | 15 | 0.5 | 15 | 64 | 11 | 5 | ? | ? |
| 1941 | 0 | 12 | 21 | 0 | 0 | 0 | 28 | 62 |
| 1942 | 29 | 8 | 22 | ? | ? | ? | ? | – |
| 1943 | ? | ? | ? | ? | 4 | 87 | 8 | – |
| 1944 | 149 | 31 | 47 | 12 | 5 | 77 | 23 | 343 |
| 1945 | 21 | 127 | 33 | 0 | 83 | 18 | 99 | 382 |
| 1946 | 86 | 79 | 18 | 24 | 5 | 14 | 22 | 247 |
| 1947 | 24 | 3 | 18 | ? | ? | ? | ? | – |
| *Maximum* | 183 | 155 | 101 | 64 | 83 | 91 | 130 | 503 |
| *Minimum* | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 62 |
| *Average* | 80 | 57 | 42 | 15 | 18 | 34 | 52 | 319 |

The risk of drought is further increased by the distribution of rainfall through the seasons. There is little or no rain in the summer months (May to August) and most rainfall occurs in the period October to March. The agricultural year starts in September and rains in both autumn and spring are necessary for a successful harvest. Where more detailed figures are available, giving a month by month breakdown, the true extent of the unpredictability becomes apparent (Table 1:5). The figures for Garian, with one of the highest average rainfalls in Tripolitania, indicate that precipitation is very unevenly distributed within any one year and from one year to the next. Indeed, this pattern of erratic variation is the norm and years when the total approximates with the annual average are the exception. In the period 1926–47 (21 agricultural years), autumn rains were late or inadequate on no less than 13 occasions. Spring rains also failed or were poor on five occasions and five years were subject to the sort of drought which leads to large scale crop failure (1935–6, 1939–40, 1940–1, 1941–2, 1946–7). Only six or seven years show the distribution of rainfall needed to produce bumper harvests. Only one year (1944) deviated by less than 10 per cent from the annual average.

Brehony has shown that in the Gebel Tarhuna, also, two in every seven years are seriously affected by drought. For the most marginal zones, such as the Sofeggin and Zem-Zem valleys, this kind of variation is even more critical and droughts of four, five and seven years have been reported at Beni Ulid.[27]

In Tripolitania, then, annual precipitation is not only low but it is also capricious and unpredictable. In many areas the year's rainfall arrives all at once in the space of a few hours and much of the expected benefit can be lost in the subsequent floods. Special agricultural technology was developed to cope with the problems of run-off water in order that these areas of scarce water resources could be brought under cultivation (Plate 2). The viability of human settlement and land-use have depended to an extraordinary degree on this hydraulic technology.[28]

As with rainfall, the temperature figures reflect the combination of Saharan and Mediterranean influences. The long littoral and the Gebel are subject to a varying degree of Mediterranean and Tell climates. To the south the climate becomes first 'continental steppe' and then 'pre-desert' in character. In Syrtica, the desert climate encroaches very close to the coast. Generally, the coastal regions have higher minimum temperatures and lower maximums than the inland area (Table 1:6).

Because of the much lower relative humidity in inland areas there is generally a greater range of temperature there than for the coastal sites. The relative humidity is 51.3 per cent at Remada, for instance, but 68 per cent at Gabes. The aridity of the interior is thus aggravated by greater daytime temperatures and much colder nights. The danger to olive trees in arid lands can come from frost as much as from drought. The lower humidity of the interior is an important factor in the formation of dew and frost. The cold winter temperatures can even lead to snow in the higher reaches of the Gebel, as in 1980 when several thousand sheep were lost as a result Another associated climatic feature is the high potential evaporation factor, which effects people, vegetation and soils alike.[29] Once again the modifying climatic influences of the Mediterranean benefit only a limited area of coast and Gebel and in the most southerly section of the Greater Syrtes the desert advances right up to the coast.

The effects of scorching winds blowing off the Sahara (the *ghibli*) have often been

remarked on. The *ghibli* can ruin crops and kill young plants and live-stock, and it increases evaporation. It is essentially a desert feature but its influence is felt in the Gebel and on the coast. The *ghibli* often carries sand with it and such sandstorms also affect the northern zone. De Mathuisieulx lost one of his horses in a six-hour storm near the Zem-Zem and further into the Sahara the results can be even more devastating, as at el Golea in 1947 when 2,000 sheep and 1,500 goats were killed.[30]

## 5
## FLORA AND FAUNA

The catalogue of the modern flora and fauna of Tripolitania compares unfavourably with that of antiquity discussed above. The complex issue of climatic change is discussed in more detail below and the intention here is simply to establish the nature of the surviving environments and wildlife, as an essential preliminary.[31]

**Table 1:6**. Temperature range at some Tripolitanian locations (cf. Table 1:2 and Fig. 1:3). (Sources: Despois and Raynal 1967; Polservice 1980; RSGI 1937.)

| Name (no. on Fig. 1.3) | Date of observation | Maximum °C | Minimum °C |
|---|---|---|---|
| 2. Tripoli | 1919–1978 | 46.0 | −0.6 |
| 4. Misurata | 1945–1978 | 50.6 | +1.1 |
| 6. Azizia | 1919–1978 | 57.3 | −3.2 |
| 11.Jefren | 1925–1976 | 48.6 | −1.5 |
| 13. Nalut | 1944–1978 | 44.4 | −3.9 |
| 14. Mizda | 1958–1978 | 49.7 | −5.0 |
| 15. Beni Ulid | 1925–1971 | 56.8 | −1.0 |
| 17. Gheriat esh Shergia | 1968–1978 | 45.9 | −4.2 |
| * Ghadames | 1944–1978 | 50.6 | −5.8 |
| 24. Kebili | – | 55.0 | |
| * Sebha | 1931–1934 | 45.8 | +0.1 |
| * Murzuk | 1931–1934 | 49.0 | +0.3 |
| * Gat | 1931–1934 | 51.5 | + 1.1 |

### Natural vegetation

There are several different types of surviving natural vegetation but almost all represent types of steppe rather than Mediterranean maquis. The Gefara is a mixture of alpha steppe (in Tunisia), of sandy bush and dwarf shrub steppe and of sterile gravels (in its central regions). The Gebel is characterized as denuded high plains steppe with some

potential for tree cover and there has been progress towards reafforestation. Further south into the Dahar, the natural vegetation diminishes both in size and in concentration and it becomes a bush and dwarf-shrub steppe again. The same applies to the Syrtic hinterland, except in the vicinity of the Sebkha Taourgha where the vegetation comprises mainly salt-resistant shrubs (as around the Gefara Sebkhas and the Tunisian chotts). The vegetation is concentrated in the wadi valleys in the Sofeggin and Zem-Zem basins. Although mainly bush and dune shrub today, occasional trees have survived the attentions of nineteenth- and early twentieth-century charcoal burners. These are, notably, acacia and tamarisk, but batoom trees are also present; cypress, myrtle, lotus and juniper still existed 150 years ago. After rains many of the wadi beds are 'green with herbage and adorned with flowers'. Perhaps surprisingly, the same is true of the normally lifeless and forbidding Hamada el Hamra.[32]

In summary, the surviving vegetation cover is generally sparse and steppe-like. The more Mediterranean steppe cover such as alpha, esparto and jujube is limited in extent by the climate, but much of the degeneration of the natural habitat must be viewed as degradation by human agency. There has undoubtedly been considerable northward encroachment of the pre-desert steppe because of deforestation and defoliation of the Gebel.

## Cultivated plants (Fig. 1:4)

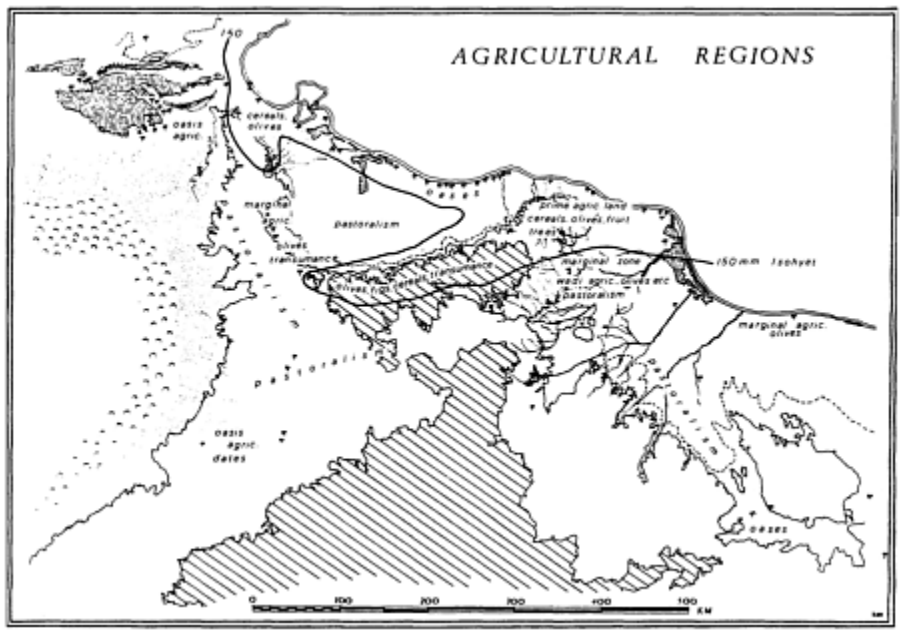


**Fig. 1:4** Agricultural regions of Tripolitania and traditional modes of exploitation.

Along the coastal strip, at the foot of the Gebel and in sand-free strips at either end, the Gefara is cultivated. In modern times the erratic rainfall has been supplemented by deep-bore artesian wells, with potentially disastrous effects on ground-water reserves. Cereals and fruit trees, notably the olive, are the main cultivars. In the many coastal oases, date palms, olives, figs and other fruits, cereals and vegetables are grown in traditional irrigated gardens. The most important
areas of the coastal plains are in the vicinity of Medenine in the western Gefara and in the Msellata foothills, where dry cultivation of cereals and olives has proved possible. The Gebel regions of Msellata, Tarhuna and Garian are the best watered upland areas and *Lepcis* and *Oea* incorporated much of this land in their *territoria.* Cultivation is concentrated on the more temperate, northern edge of the plateau and consists principally of arboriculture (olives, figs, vines, pomegranates, pistachios, almonds, carobs, peaches, apples, pears). Cereals are also grown (wheat and barley), but yields are very low in comparison with other Mediterranean countries. A wide range of vegetables and herbs is grown in small, irrigated gardens. Palms are irrigated in a number of small oases on the Garian and Nefusa plateaux. Economically, olive cultivation is the most important activity, followed by figs and

date palms. In the pre-desert zone, agriculture is now limited mainly to the scratch cultivation of cereals in the wadis. At Beni Ulid, a considerable stretch of the valley bottom is still covered by an orchard of olives, palms, figs, plums and almonds, whilst cereals, vegetables and pulses are grown in plots between the trees.

A similar range of flora is cultivated in the oases of the Nefzaoua, Ghadames, Giofra and Fezzan. Date palms are the principal economic resource, however, as other fruit trees do not always mature properly. The larger oases contain hundreds of thousands of palms. Cereals are also grown, but in too small a quantity to replace dates as the dietary staple of the inhabitants. Most other trees, vegetables and herbs are grown in small, intensively irrigated plots.[33]

## Wild animals

In 1947, the wild animals of the region included wild boar, hyena, fox, jackal, oryx, mouflon, gazelle, hare and marmot Some of these are now extinct and others, such as the gazelle, are seriously endangered. Leopards may have survived as late as the 1930s, but ostriches were extinct much earlier. The surviving fauna represent an ever diminishing proportion of the species present in antiquity, with man the chief culprit in the regrettable record of extinction.[34]

## Domesticated animals

In 1960 there were 860,000 sheep, 950,000 goats, 153,000 camels, 80,000 cattle, 92,000 donkeys and 782,000 chickens in Libyan Tripolitania. Along with horses, these are the principal livestock of the Tunisian territory also. An important aspect of these species, especially horses, camels, sheep, goats and donkeys, is that they have undergone adaptation to arid zone conditions. The main breed of sheep is the fat-tailed Libyan Barbary and, along with goats, they are now the chief resource of the pastoralists.

The Tripolitanian camel is the single-humped dromedary and is the animal best adapted to an arid zone environment. It can go for 15 days without water, being extremely resistant to fluid loss and able to replenish its fluid levels within minutes, when water becomes available. The number of camels, horses and donkeys has declined in recent years with the ever-increasing availability of motorized transport, but in the past these three animals (and perhaps horses in particular) were bred on a much greater scale. By no means, then, have sheep and goat herding always been the dominant forms of pastoralism in the region.[35]

## 6
## CLIMATIC CHANGE

It is apparent from the previous sections that the modern climate is probably similar to that of the Roman period. But it is also evident from prehistoric cave and rock pictures in the central Sahara that major climatic change has occurred at some era in the past. The latest thinking is that, following a wetter phase from *c.* 40,000–20,000 BC, there was a gradual change towards a drier climate. The last major pluvial phase may have been as late as 6,000 BC, with major climatic change then occurring between 4,000–2,000 BC The latter date certainly marks the beginning of the current arid and desiccating climatic phase. Most geographers and geomorphologists believe that there has not been any significant change since.

There has been a growing realization in classical archaeology that climatic change can no longer be used as a convenient, catch-all explanation for the major changes in settlement patterns and economies in the Roman period. Current geomorphological work in the Libyan Valleys Project supports the view that the Roman period climate was not significantly different from modern conditions.[36]

In 1969 Vita-Finzi published his fundamental, but subsequently much-criticized, thesis on post-classical climatic change and its effects on the Mediterranean valleys. In it he argued for a climatic ‘oscillation’ between the Roman period and the present. But he agreed that modern conditions are remarkably similar to ancient ones. The postulated wetter phase in the Middle Ages which Vita-Finzi held responsible for major aggradation of valley floors all round the Mediterranean cannot be shown to have existed in the Sofeggin and Zem-Zem region although there is some evidence from the coastal region near *Lepcis.* The ULVS work has traced evidence for landscape change and degradation, but these indices do not seem to correspond to a single event or process and seem rather to represent the normal stresses and hazards of the exploitation of a highly marginal environment. Whilst one cannot rule out the possibility of oscillation between drier and wetter conditions, micro-climatic change on a regional basis or a minor increase in aridity, the likelihood is that the climate of Tripolitania has remained relatively stable from late Neolithic times to the present.[37]

There can be no doubt, however, that landscape changes have taken place. In the Msellata hills and the coastal region there has been deep gullying and blanket erosion of soils, with redeposition at different locations. This erosion need not necessarily indicate a phase of higher rainfall in the past, bearing in mind the normal pattern of heavy

downpours and run-off floods of the region. It is more likely to be the result of sheet erosion of soils exposed by vegetation loss, and this could be due to overgrazing, agricultural clearance, timber felling, or the breakdown of dams and water control walls. Even in 1857 Barth suggested that the denuded landscape of parts of the Gebel was the result of neglect, rather than of climatic change and that the process might be reversible. The contrast between past and present was graphically demonstrated by Oates' survey of the Fergian region between Tarhuna and Msellata in the 1950s. He recorded 63 sites which had been equipped with olive presses in the Roman period (126 individual presses in total). There were only about 20 surviving olive trees in the region at that time, though they have now been more extensively and successfully reintroduced. The great success of the olive groves replanted this century in the western Gefara, in the Gefara south of Tripoli and in the Gebel Tarhuna have further demonstrated the viability of these areas after centuries of underexploitation.[38] In some instances, then, the process of denudation of the landscape has proved to be reversible, which would not be possible if climatic change was the cause of deterioration. Until experiments have been carried out in the pre-desert one can only speculate on the probable results of replanting and recultivation of the wadi beds. The extreme marginality of these zones means that they would have been affected by even very minor climatic change, but, more importantly, there may have been ecological changes brought about by the previous periods of exploitation and subsequent neglect.

How significant were these factors? Climatic change and environmental breakdown have been ruled out as unitary explanations for the decline of Roman farming in the Tripolitanian pre-desert zone. There was no single moment of catastrophic breakdown in the system. However, there are indications that the exploitation of these extremely marginal lands was highly vulnerable and the changing environmental conditions may have affected the farming communities in a very piecemeal way across several centuries of struggle, rather than rendering them all unsustainable at a stroke.

## 7
## HUMAN EXPLOITATION: PASTORALISM AND AGRICULTURE

Although it is clear that the ancient environment in Tripolitania bore many similarities to the modern one, literary evidence for farming practice in Roman Tripolitania is rather thin. In subsequent chapters we shall examine in detail the archaeological evidence for ancient settlement and land-use, but this alone cannot fill all the *lacunae.* As Whittaker has stated,

> We shall never be able to reconstruct a portrait of society in North Africa under Roman rule from the ancient sources and archaeology alone. There is more information to be had about the Maghreb from any standard, modern textbook on the subject than from the entire corpus of ancient literature.[39]

Certain insights into the lifestyles of its ancient peoples may be gained from studying the recent history of traditional economic practice in different regions of Tripolitania (Fig. 1:4).

### The Geffara

Because of low rainfall and shifting sand dunes most of the central Gefara is unsuitable for settled agriculture. Only the areas immediately north of the Gebel escarpment, a narrow coastal band of oases and portions of the eastern and western Gefara are suitable for unirrigated agriculture. Although the modern tribes of the Gefara are primarily pastoralists (for instance only 1 in 13 of the Siaan tribe are sedentary), they do practise scratch cultivation wherever possible and have tribal centres in the oases. In the foothills of the Gebel and in the western Gefara there are permanent villages and a greater amount of sedentarization.

### The western Gebel

The Gebel Matmata (Tunisia) and Gebel Nefusa (Libya) are occupied mainly by relic Berber populations, both sedentary and semi-nomadic. Both groups normally farm some lands in the Gefara below the escarpment for scratch cereal cultivation. The pre-desert plateau of the Dahar is also exploited as winter pasturage for the flocks. Many of the pastoral tribes actually possess dry-farming lands in the Gebel, orchards of olives, figs and almonds and permanent villages. Such tribes normally leave only a ‘core’ population in their ‘home’ village when they transhume with their flocks in summer after the harvest. Both Louis and Despois distinguish these transhuming tribes and their mixed economy from either fully sedentary or ‘nomadic’ tribes.

The agricultural communities tend to specialize in arboriculture, with cereal cultivation pursued more opportunistically according to the pattern of rainfall in a given year. The principal crops are olives, figs, dates, almonds, vines, pomegranates, barley and wheat. In spite of a trend towards sedentarization (and particularly olive cultivation) in modern times, some tribes remain more exclusively pastoralists. They have traditionally procured their cereals and other agricultural products by a combination of means; scratch cultivation or oasis farming, trade, or as a ‘protection’ fee exacted from sedentary communities. These protection arrangements also benefited the farmers, since they were not only spared the disruption of raids from their contracted partners, but the latter were obliged to defend their sedentary allies from the raids of others as well. These contracts were supplemented by a regular barter trade in meat, wool and dates against cereals, olives, figs and so on. The economic bases of these groups of people are essentially complementary to each other and give the region a distinctive mixed economy. The agricultural practices in the Gebel involve the use of dams and barrages in a system of run-off agriculture which directly parallels that of the Roman period; much can still be learned here at first hand of the practicalities and problems of these ancient farming methods.[40]

### The eastern Gebel

The Gebel Tarhuna and the Msellata regions present similar topographic characteristics to the Gebel Nefusa, but sedentary agriculture had been increasingly limited to the Msellata, prior to the Italian colonization of the Gebel in the 1920–1930s. Brehony has

characterized the tribes of the Gebel Tarhuna as having regressed into semi-nomadism. It is clear, however, that his 'semi-nomads' tend towards 'transhumants', with fixed termini, sowing and pasture lands. The shifting cultivation of cereals supplements the pastoral base.

Arboriculture had almost died out in the Tarhuna region in the nineteenth century, but has revived since the creation of the large Italian estates such as Breviglieri. Some progress has been made towards the reafforestation and refoliation of the area, which had been severely denuded by overgrazing and charcoal burning. The Gebel is actually well suited to the dry farming of the olive tree as the numerous ancient ruins testify (Plate 1).

Since the 1930s there has been a significant shift towards sedentarization among the pastoral tribes, partly in response to the agricultural redevelopment just described. The declining importance of pastoralism was exacerbated by the Italian expropriation of over 40,000 hectares of the traditional grazing lands of the Tarhuna tribes, and the catastrophic slaughter of 50–60 per cent of all livestock during the Second World War.

The Gebel Msellata has suffered far less defoliation from overgrazing and settled agriculture, particularly arboriculture, has continued in this region. Prior to the 1930s, the Msellata region provided the seminomadic tribes of Tarhuna and the Orfella region (Beni Ulid) with seasonal employment at harvest time. The almond and olive harvest lasted several months from September and participating tribes were paid in kind with up to one seventh what they harvested. The creation of the Italian estate at Breviglieri (El-Khadra) diverted 3,000 of these crop pickers.

In the eastern Gebel, then, we also find that the pastoral and sedentary economies are necessarily interactive.

## The Nefzaoua and the western Dahar

The oases of the Nefzaoua and the pre-desert plateau (the Dahar) lying southeast of the Chott Djerid and east of the Great Erg, broadly speaking, comprise a single zone. The region is characterized by two modes of life, sedentary agriculture in the oases and seminomadic transhumance elsewhere. All the tribes, however, are part-pastoralists and part-cultivators. Each tribe owns land in one or more oases, which is cultivated in some cases by sharecroppers of a reduced social status *(khammes).* Mostly, though, the sedentary communities are of equal status and the transhuming elements are often involved in the harvest. In the nineteenth century the population of the Nefzaoua was about 18,000 (8,000 semi-nomads and 10,000 sedentary cultivators) at a time when the antique canalizations and *foggaras* were in a state of decay. Since renovation of these the population has increased significantly (22,000 semi-nomads and 28,000 sedentarists in 1963).

As in the Gebel, the Second World War and a series of disastrous droughts in the 1930s and 1940s did untold damage to the pastoral tribes as 80 per cent of their livestock died. Since then there has been an increased tendency towards oasis agriculture.

The transhumance movements of the Dahar tribes extend west to east into Gebel and Gefara as we have seen above. Others transhume over great distances north and south from the Nefzaoua. The northward movements take the tribes into the Bled Segui to the north of the chotts and other areas where run-off or dry farming is possible, and

interaction with sedentary groups is necessary. The tribes of the Nefzaoua and Dahar thus have territorial interests in several distinct ecological zones.[41]

### Ghadames and Derj depression

A similar pattern of life applies in desert region centred on the oases of Ghadames and Derj. The oases are the only local sources of dates, cereals and vegetable crops. Since the collapse of the caravan traffic, little trading has been conducted with the Gebel tribes, but it was certainly once an important supplement to the range of crops grown (the most important imports were olive oil and grain). The northward transhumance of flocks still extends as far as Remada, the site of one of the Roman frontier forts.

### The Sof feggin and Zem-Zem

Although the rainfall figures drop below the minimum levels for dry farming, run-off agriculture of the wadi alluvium is possible in many places. Particularly in the north of the region, where rainfall is highest and more consistent, permanent villages exist and there are trees in the wadis, notably at Beni Ulid (Plates 2 and 37). These village populations include a substantial permanent element along with transhuming groups. However, without some system of water control the wadi agriculture rarely rises above the level of scratch cultivation and so the traditional economic mode has been pastoralism with shifting cereal cultivation. The use of pasture and water catchment cisterns is regulated within each sub-tribe of the Orfella. Some tribes send contingents north to the harvest in the Msellata region as we have noted already. The Orfella also have extensive pasture rights near the Syrtic coast.

### Fezzan

Cauneille has shown that many of the major seminomadic tribes of western Libya are confederated from sub-tribes. Elements of these sub-tribes transhume across the entire region from Gebel to Fezzan. Most of the tribes own agricultural land either in the Gebel or Fezzan and some have permanent villages in these regions. So once again it is not easy to categorize the tribes as ‘nomads’ or ‘farmers’. The modern cultivators of Fezzan still use many of the *foggaras,* which have been maintained and constructed anew up to recent years. In some tribes oasis cultivators are held in a lower social status *(haratin)* by a proprietorial class of semi-nomads.

### Syrtica

This region is divided into two main zones: a betterwatered coastal plain and a pre-desert steppe or interior zone where there are a number of important oasis centres (Zella and the oases of the Giofra). The presence of numerous ancient ruins, including olive presses, in the coastal region show that the area is now underexploited. The tribes are predominantly pastoral, though a certain amount of scratch cereal cultivation is practised. However, the pasture is considered the best in Tripolitania. The oases centres provide a sedentary focus

for the interior pastoral tribes, where the usual range of oasis crops is cultivated.[42]

Examination of the modern response to the climatic and geographical limitations imposed on the indigenous populations in different regions suggests several important conclusions. First, the more marginal the ecological zone, the greater the importance of pastoralism. Second, to counterbalance this, it must be reiterated that a pastoral economy cannot exist in isolation from sedentary agricultural communities. By association with oasis cultivators, by trade, by 'protection' arrangements, by working as seasonal labour at harvest time, semi-nomads generally succeed in integrating an element of a mixed economy into their pastoral base. In general the interrelationships between semi-nomads, transhumers and sedentary farmers take the form of symbiosis rather than conflict.

Third, there are indications of the sort of political or economic pressures and opportunities which can lead to increased sedentarization. Sedentary communities have thrived particularly in the Gebel, Fezzan and the many oases centres. The redevelopment of agriculture in the Gebel Tarhuna has illustrated the ability of semi-nomadic tribes to break away from traditional practice and adopt a new *modus vivendi*.

## Summary

The stability of settlement and exploitation in Tripolitania over the last few millennia appears to have been fragile, with successive phases of increased sedentarization or of pastoralism attested or postulated. Ecological factors are not the only ones to be considered in seeking to account for such changes of strategy, but when social and political issues are examined in subsequent chapters it will be important to keep the essential marginality of the region in mind.

# 2
# THE TRIBAL BACKGROUND

## 1
## THE GRECO-ROMAN VIEW OF NATIVE AFRICANS

Since the nature of the 'opposition' was bound to have had a profound influence on Roman policy and the history of Roman/native interaction, the study of a Roman frontier province cannot proceed far without considering the indigenous population. The ancient Maghreb was peopled by tribes of Mediterranean character, rather than of negroid stock, and their descendants are the Berbers of today. Before turning to a detailed examination of the tribes of Tripolitania, it is necessary to gain a wider perspective of the general character, organization, lifestyle and culture of the pre-Roman tribal societies of North Africa.

There are three main sources of information on the tribal background. First, there are the primary source references and epigraphic material, but since these are mainly geographical or historical references relatively little concerns the social structures and lifestyles of the native people. There is, however, a greater volume of primary source material than, for instance, for Roman Britain.[1]

The second category of data is archaeological, providing details of settlement sites, burial customs and religious practices. For North Africa this is a comparatively meagre resource, which is a reflection of the almost total emphasis placed, up to now, on the excavation of Roman cities.

Third, there is information of a purely comparative nature derived from anthropological study of similar societies and communities in the recent past in the Maghreb and elsewhere. Because the Arab invasions brought considerable changes in tribal society in North Africa it is not possible to make direct equations between modern political experiences and the ancient native societies. It is reasonable to assume, however, that useful comparison does exist between traditional Berber rural societies (still using agricultural techniques and equipment of great antiquity) and their forebears.[2] It can be argued that, since modern climatic conditions have a close correlation with ancient ones, such comparanda can illustrate a range of possibilities, whether for social organization or in terms of lifestyle, in a given ecological zone.

In later chapters reference will be made to theories which have presented the history of the African frontiers as a conflict 'between the desert and the sown', that is between nomadic and sedentary people. Rachet is one of the most recent and extreme proponents of the theory, seeing the history of Roman Africa largely in terms of conflict and confrontation. Such an interpretation gained credence because it seemed to match up with problems encountered by the French in their North African territories in the nineteenth and twentieth centuries. This distorted perspective of tribal society has led, therefore, to extremely subjective historical conclusions.[3] Since perspective is all important,

considerable space is devoted here to the discussion of a new basis for understanding Libyan tribal society.

There are two fundamental modern works relevant to the study of the tribes in Tripolitania. The catalogue compiled by Jean Desanges from source references for all the known North African tribes in antiquity, remains the starting point for all new research. His comments on the tribes, however, were largely restricted to the question of their geographical locations. In addition, there is the classic study of the eastern Libyan peoples by Oric Bates. His restrained and cautious examination of linguistic, cultural and ethnographic material, in addition to the primary sources and the limited archaeological data then available, provides many insights. However, the overall impression received from these and other secondary works is that the primary sources they followed contained confusions and contradictions.[4]

The main reason for the lack of detailed study of socio-economic aspects of tribal society in North Africa also concerns the primary sources. There are several aspects of the problem. First, the majority of references relate not to the native population in isolation, but in contact with Romans, Greeks or Carthaginians. There are no literary works written in the Libyan language and no single Roman source to compare with the *Germania* of Tacitus. Although there are geographical works, many of these are compilations (and often inexact ones) from earlier works. Comparatively little ethnographic detail was recorded and some such material was clearly repeated anachronistically from earlier sources. Thus both Mela and Pliny reproduced stories from Herodotus and other Greek sources whose validity in the first century AD must be doubted, but all too often has not been. The exact dates of the sources used by Pliny are not always evident and as well as borrowing from other historians, such as Mela, he had access to official documents ranging in age from a few years to centuries old. It is not possible therefore, to say that Pliny's account presents a consistent picture of North Africa in the second half of the first century AD. Indeed far from it; his *Natural History* is an elaborate collage and often lacks geographical and chronological coherence. It is not surprising that occasionally there are geographical blunders or miscomprehensions. Nor does the inclusion of material which is plainly mythical or apocryphal encourage absolute confidence in the veracity of other uncorroborated stories. There is also the danger that an undetected official bias may have distorted certain facts or that the Roman historians and geographers may have introduced their own distortions in order to match their information with their preconceptions. These potential weaknesses are often not detectable, particularly once a passage has been extracted from its full context.

That Pliny did not always understand the significance and geographical indications of his own sources is clear from his account of the campaign of Cornelius Balbus *c.* 20 BC. Pliny was here using two distinct sources of information, from the first of which we learn that Balbus captured three tribal centres of the *Phazanii,* followed by three of the *Garamantes,* including *Garama* (Germa). The second source provided a list of names and effigies carried in Balbus' subsequent triumph. Pliny confessed his bewilderment that few of these names corresponded with those he had already given from his first source, but he could not explain the discrepancy. Consequently many ingenious and sometimes ludicrous proposals have been made by scholars seeking to fit the names to modern locations. However, it seems certain that one group of names relates to southwest