The Western coastal zone of Tripolitania a human geography

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THE WESTERN COASTAL ZONE OF TRIPOLITANIA

A HUMAN GEOGRAPHY

By

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PREFACE

This thesis has been prepared during the past two and a half years for the submission for the degree of Master of Letters in the University of Durham.

The selection of the subject resulted from the desire to acquire detailed knowledge of various problems of the human geography of an area of my country. Human studies in Libya on a regional basis are rare and also vital for rational economic and social development.

Many were those who helped me in different ways. My grateful acknowledgments are rendered to Prof. W.B. Fisher who accepted me as a postgraduate research student in his department of geography in the Durham Colleges. Through his encouragement an early start was possible. To Dr. J.I. Clarke thanks are given for his generous supervision, his always helpful attitude and his unfailing patience, which has rendered an invaluable assistance without which it would have been very difficult for me to progress in my research.

To the great number of individuals and institutions who helped the provision of statistics, reports and maps I also offer my grateful thanks.

H.M.R. BULUGMA

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INTRODUCTION

It is customary to think of the western coastal zone of Tripolitania as one of the most clearly defined and in some respects one of the most typical Tripolitanian agricultural areas. Furthermore, it is also distinguished in its racial characteristics. It is within this coastal strip that the only Berber community along the entire Libyan coastline is to be found. In other words the racial contrasts between the different ethnic elements is unusual for such a region. The ethnic elements of this region are represented by the Berbers, the Arabs, the Arab-Berbers, the Kologlis, the Negroes and the Italians.

Most of these elements have been deeply rooted in this zone and of course the whole country since remote times. The Arabs first came to Tripolitania in the 7th century A.D. although their number was limited and so the Berbers, who were the original inhabitants of the country, remained the dominant racial element. This situation persisted until the 13th and 14th centuries A.D. when a new element began to appear as a result of the close relations between Arab and Berber caused by the invasions of the Arab tribes Beni Hilal and Beni Suleim in the 11th century A.D. The new element is known as the Arab-Berber element. However some Arab invading tribes avoided mixing with the Berbers and so retained their purity.

The Kologlis are a comparatively recent element. Their existence was entirely due to the Turkish domination starting from the second half of the 16th century A.D. and ending at the beginning of the second decade of the present century. Their number is not as high as the other elements, apart from the Negroes and the Italians.

The Negroes, in all probability, were found before the Arabs. Their

existence resulted from the trans-Saharan trade with different parts of central Africa. This trade probably first was carried out on a large scale by the Phoenicians in pre-historic times and continued until the 19th century A.D. when both England and France opened Central Africa and changed the route of this trade to West Africa and the Atlantic Ocean. Also since prehistoric times Jews were found all over North Africa. The crises of Palestine in 1958 caused the native people to attack the Jews which made them migrate to Tripoli City and Israel itself. Consequently the Jewish element has entirely left the western coastal zone.

At present the most dominant element of the former ethnic groups is the Arab-Berber element. Nowadays and because of the deep effect of the Arab influence, especially from the linguistic and religious points of view, the Arab-Berber element is normally regarded as Arab stock despite its Berber racial foundation. However this superficial declaration does not change the fact that about half of the population of the western coastal belt is of a Berber origin. A similar attitude also applies to the Kologlis and the Negroes, who because they speak Arabic and follow a different heresy from that followed by the Berbers of Zuara consider themselves as Arabs.

As far as the Berbers are concerned there are no complications simply because they are still proud of their race, speak the Nazih-Berber language, avoid mixing with the other elements and follow the Kharjets heresy. But the other ethnic elements are less clearly defined as they have a common language and common religious beliefs. Examples are that apart from Zuara Berber community the rest of the western coastal zone population speak Arabic and follow the Malikia heresy. More important still, there are no clear physical

differences between any of these ethnic groups. It is perhaps the political beliefs which may guide us to trace some of the ethnic differences. For example the Kologlis form a distinct political group. However recent increases in intermarriage with the other elements impede precise determination of the purity of this group. Similar social changes have affected the pure Arab element. It is perhaps only among the Negro and Italian elements where purity is still marked, but even here some slight modifications have occurred. As far as the negro element is concerned although intermarriages between them and the rest of population is condemned, it was a rather common custom for wealthy people to marry negro slave women. This situation, although stopped now, has produced a half caste element which easily can be traced. As far as the Italian group is concerned few intermarriages with the rest of population have yet occurred, although in recent years a few cases have been recorded in our region.

Absolute purity of ethnic elements is lacking even among the Berber community. Although the Berbers of Zuara are strongly opposed to any outside marriages, the spread of education and the stable economic situation have reduced racial influences and consequently many outside marriages have been recorded during the past five years.

The tribe is still the basic racial and social unit, although the tribal system is not altogether suitable for a modern society. To reduce such tribal influence education is of special significance, as well as the development of the present economy and the decline of semi-nomadism by settlement of the semi-nomads. Improving the present limited communications and developing the limited industries will also help.

The western coastal zone begins about 4 miles west of Tripoli City and extends westward to the Tunisian frontier, a distance of about one hundred miles. The geological foundation of this western coastal belt, which is distinguished by its uniformity, is of Quaternary deposits except along the shore line from Zanzur to Sorman where Miocene deposits outcrop to form the shore cliffs. The southern limits of this area are more or less defined by a continuous chain of sand dunes from Zanzur in the east to Agelat in the west. The width of this strip is roughly about 7 miles. On the other hand from Agelat to the Tunisian frontier the sand dunes are practically replaced by Sebkas - salt marshes. The width of this western sector is roughly about 15 miles. This means that the total area of the western coastal zone is about 1100 square miles of which 350 square miles are found in the eastern part.

The physical and human contrasts between the eastern and western parts are well marked. As far as the physical diversity is concerned, the scarcity of water resources, the infrequency of rainfall and the large coverage of sebkas are among the common features of the western sector. These physical phenomena have restricted the sizes of the oases found in this part and thus reduced the ability of the region to support a considerable population. Therefore this sector does not contribute greatly to the general economy of the western coastal belt, as semi-nomadism largely replaces cultivation. On the other hand, this part is very distinguished from the ethnic point of view; it is in the town of Zuara that the only pure Berber group is to be found in all northern Tripolitania. Other characteristics of this part are the importance of coastal fishing and of smuggling with Tunisia further inland.

Only a thin strip in the western zone belongs to the maritime region as Saharan influences rapidly increase inland. The maritime zone is, in fact,

limited to a width of only about 4 miles and therefore includes only the town of Zuara and the villages of Pisida and Zelten. The much broader steppe climatic zone to the south is largely excluded from our considerations, but because of the close relationship of human activities in the two climatic zones, references are necessarily made to the steppe.

In contrast, the eastern sector of the western coastal zone is regarded as one of the best agricultural areas in the whole of Tripolitania. Naturally the abundant water resources are among the most important determining factors in developing this semi-arid zone. Secondly it enjoys a higher rainfall than the western part and thirdly it has comparatively fertile soils. These physical phenomena have facilitated agricultural development for Libyan and Italian alike. It is within this sector that most of the total area acquired by the Italian government for their agricultural scheme is to be found. Indeed, agricultural activity has resulted in a rather dense concentration of population; over 75% of the population of the western coastal zone, estimated at about 135,000, are found in this part.

Although the western coastal zone supports about one tenth of the whole Libyan population and about one fifth of the Tripolitanian population, and has considerable agricultural importance in a country which almost entirely depends on agriculture, it has not benefitted from detailed studies. This fact and my previous knowledge of this region, in which I was born and received my elementary and secondary education, stimulated and facilitated this research project. Nevertheless many problems have been encountered, which is the case of all the underdeveloped areas. The most important of these problems was the prevailing lack of precise data, even about the geology and climate.

Population censuses were unknown before the year 1917 when for the first time an Italian army officer published his work known as "Le popolazione della Tripolitania". Even after this year censuses were few and most of them are not reliable enough to reveal real population trends. At the same time statistics of agricultural activities are also few and inaccurate, in many cases due to the lack of trained employees. To complicate matters still further, most of the Italian work was destroyed or transferred to Italy during the World War II.

Accurate maps at suitable scales are very scarce, especially of settlements, but this problem has been partially solved by the use of air photographs.

Finally, it should be emphasised that studies of population in a country like Libya are far more difficult than in the economically advanced countries of the world, because the people are unused to social and economic surveys and often suspicious of their intentions. However, determination and the search for knowledge have encouraged me enormously to complete this thesis.

PART I

THE ENVIRONMENT

CHAPTER I

THE LAND

A. GEOLOGY

Along the whole of northern Tripolitania, the line of division between the coastal belt and the Jefara plain is decidedly indistinct and arbitrary. Although the coastal belt experiences a different type of climate, which is described as the maritime region to distinguish it from the Jefara which forms the steppe zone to the south, from the point of view of morphology the whole region is well considered as the Jefara plain.

The Tripolitanian Jefara constitutes an area of about 20,000 square kms. This plain is bounded by the Mediterranean in the north, the Jebel of Tripolitania in both south and east and the Tunisian frontier in the west. Along this frontier the Jefara reaches its greatest width about 150 kms., while its eastern extremity becomes thinner and thinner until it meets the sea at Homs. The Tripolitanian Jefara therefore is no more than a prolongation of the Tunisian Jefara in the west. In other words the Jefara of both countries constitutes a unique geographical entity in spite of the arbitrary frontier.

The Jefara in Tripolitania, which takes roughly a triangular shape, presents the most recent and widespread deposits of the Quaternary era. These deposits which cover the major parts of the area are represented by: desert crusts, salt marshes, sand dunes and alluvial sands. These sediments are often known as the post-Miocene deposits. Their formation as Prof. Lipparini states(1) "Includente quindi anche un Pliocene continentale finora non seperabile dal

resto per manchanza di fossili" are not entirely Quaternary but also include some of the Pliocene continental deposits. In other words the formation of the Quaternary deposits of the Jefara started in the Pliocene epoch and continued during the periods of Mindel, Riss and Wurm which represent the continental deposits of the Pleistocene and of course these deposits were continued until the present, or the Holocene. The only marine deposits which have been found belonging to the Quaternary era are represented by the Tyrrhenian deposits which according to Archambault form a rather thin clay layer dividing the Quaternary water table into two layers: the first is the supply for the Arab wells, while the second and deeper layer is the water resource of the Italian wells.

At the end of the Tyrrhenian period the sea retreated northward and the Wurm sediments started to refill and cover the area affected. Of course this task has been accomplished later on by the Holocene continental deposits. The formation of the shoreline from Homs to Sorman started to take its shape at the beginning of the Wurm period, while the area west of Sorman, unaffected by the Tyrrhenian transgression, must have been formed before then, perhaps at the end of the Miocene. On the other hand the present shoreline west of Sorman is a very recent one, as indicated by the continued formation of lagoons and sebkas. However no detailed work has been done to show the former stages of the shoreline formation in the whole area.

The Quaternary deposits extend from Zuara in the west to the Homs region in the east where the Miocene formations outcrop to form the Msellata hills which extend north-eastward from the Jebel to the sea (see Fig. 1)
The general depth of Holocene formations is about 50 metres. In spite of the

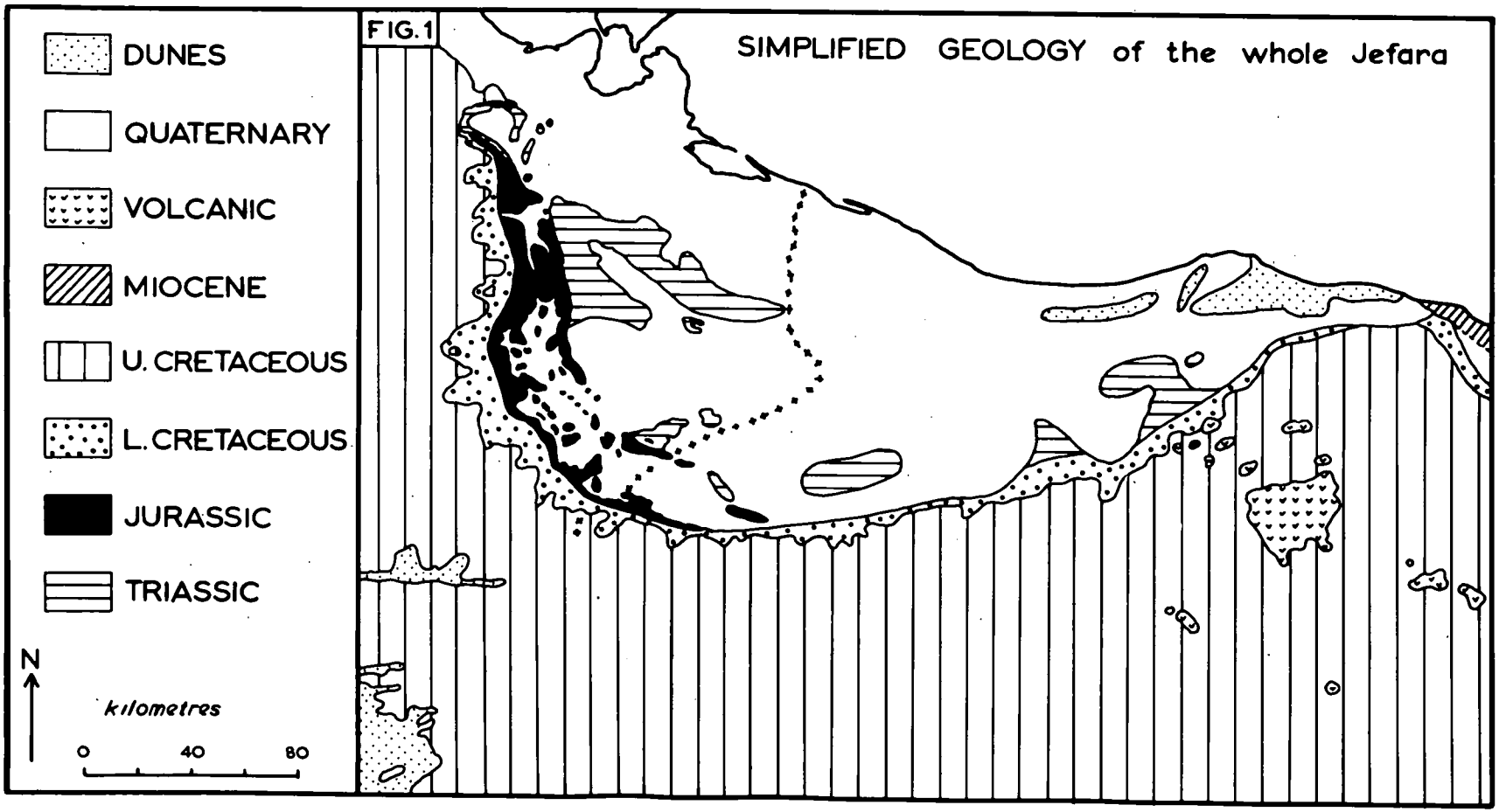
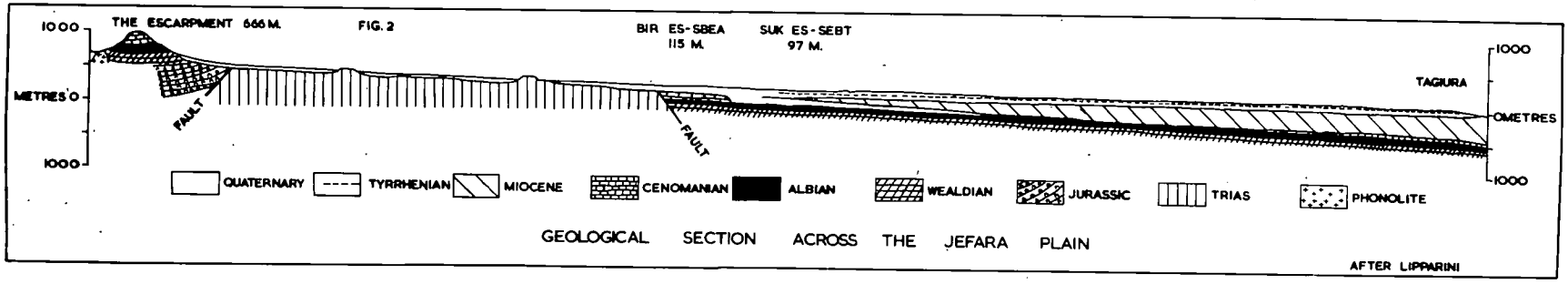


FIG. 1
SIMPLIFIED GEOLOGY of the whole Jefara
DUNES
QUATERNARY
VOLCANIC
MIOCENE
U. CRETACEOUS
L. CRETACEOUS
JURASSIC
TRIASSIC
N
kilometres
0
40
80

fact that these deposits get thinner as we travel to the south, it should be mentioned at the same time that these deposits, between Suk el Sebt and a few kms. south of Bir es Sbia, reach their greatest depth of about 120 metres, as shown by Fig. 2 by Lipparini. On the other hand Archambault believes that the Quaternary deposits are never below sea level except in a very small area along the shoreline as seen by Fig. 3. Moreover both Lipparini and Archambault agree that the recent formations or Holocene deposits are deposited directly upon the Trias formations south of Bir es Bia. In other words the Holocene sediments are deposited on the Miocene formations from the shoreline until Suk el Sebt and on the Trias formations from this limit to the foot of the Jebel. This simply means that the Miocene and Cretaceous formations are not represented in the area between Azizia and the escarpment.

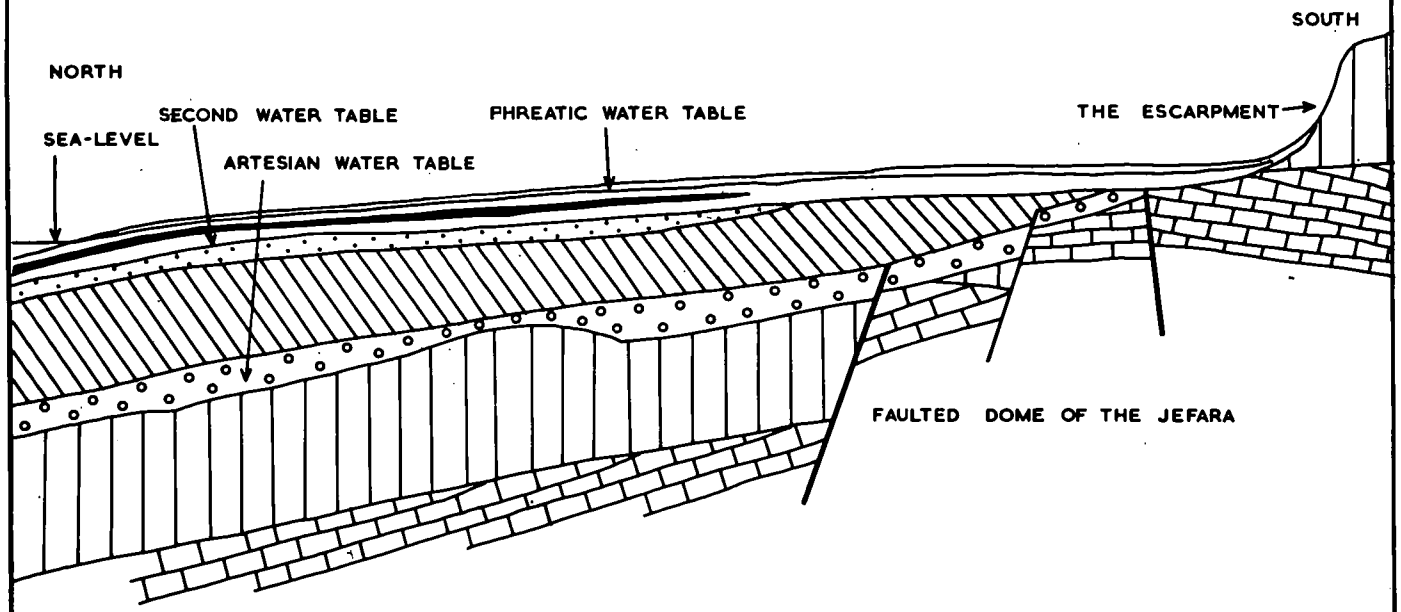
The Miocene formations are the only sediments representing the Tertiary era. They are deposited in some places upon the Cretaceous formations which are represented by the continental sediments of the Cenomanian, Albian and Wealdian periods, while near their southern limits they were deposited directly upon the Pliocene continental sediments. However, the Miocene formations which are in contact with Cretaceous sediments in the Homs area are the only Miocene formations to outcrop in the whole of Tripolitania. This outcrop caused Prof. Lipparini[(2)] to believe that the Miocene formations of the western Jefara aremuch thicker than the eastern part. The variations in depth of the artesian wells between west and east confirm this opinion. There are similar variations in the thickness of the Miocene deposits from north to south; from several hundred metres along the coast they get thinner as we travel to the south, where they vanish near the area of Suk el Sebt, about half way between



GEOLOGICAL SECTION ACROSS THE JEFARA PLAIN

AFTER LIPPARINI

FIG. 3 GEOLOGICAL SECTION ACROSS THE JEFARA : AFTER ARCHAMBAULT



the shoreline and the escarpment.

The oldest formations found in the Jefara up to the present day belong to the middle Trias, which outcrop in the Azizia area, the cupola of the large Jefaran dome. This Triassic dome was covered by the Transgressive Miocene. Later on it was refilled by the Holocene continental deposits which, as it has been mentioned, are represented by the alluvial sands, the Sebkas, the desert crusts and the sand dunes.

In the case of our western coastal region no alluvial sands are present because there are no Wadis flowing down to this region.

Among all the geological strata found in the Jefara, tabulated below, only two are of great importance: the Quaternary and the Miocene strata. The first not only retains the phreatic water layer but also provides the parent material for all the soils of the Jefara plain. The second is of no human interest except from the point of view of the location of the artesian water layer.

Geological Evolution of the Jefara

			Fasis	Movements	Present or not
Quaternary	Holocene				
	Pleistocene	Wurm	Continental	Regression	Present
		Tyrrhenian	Marine	Transgression	
		Riss	Continental	Regression	
		Mindel			
Tertiary	Pliocene		Continental	Regression	Present
	Miocene		Marine	Transgression	
	Oligocene		Continental	Regression	Not
	Eocene				

		Fasis	Movements	Present or not
Cretaceous	Senonian (Donian, Corpanian, Sartonian), Turonian	Marine	Transgression	Not
	Cenomanian, Albian, Wealdian	Continental	Regression	Present
Jurassic		Continental	Regression	Not
Trias		Marine	Transgression	Present

B. LANDFORMS

The simplicity of the geological structure of the Jefara is well evidenced in its topography. The topography of the western coastal region is however more complicated than elsewhere because of the intermingling of Sebkas and sand dunes, the changes in the shoreline, the different sizes of the oases between east and west and the southward extent of the sand dunes in the whole region. Therefore it is best for our purpose to divide the region into four different landforms: (see Fig. 4)

(1) The shoreline. (2) The oases belt.
(3) The Sebkas (4) The sand dunes.

(1) The shoreline between Tripoli and the Tunisian frontier can be subdivided into three different sectors:

(a) Rocky shore from Tripoli to Marsa Sorman

After a few kms. of sand which forms the beaches west of Tripoli city, the Miocene rocks start to appear and form the cliffs along this sector of the

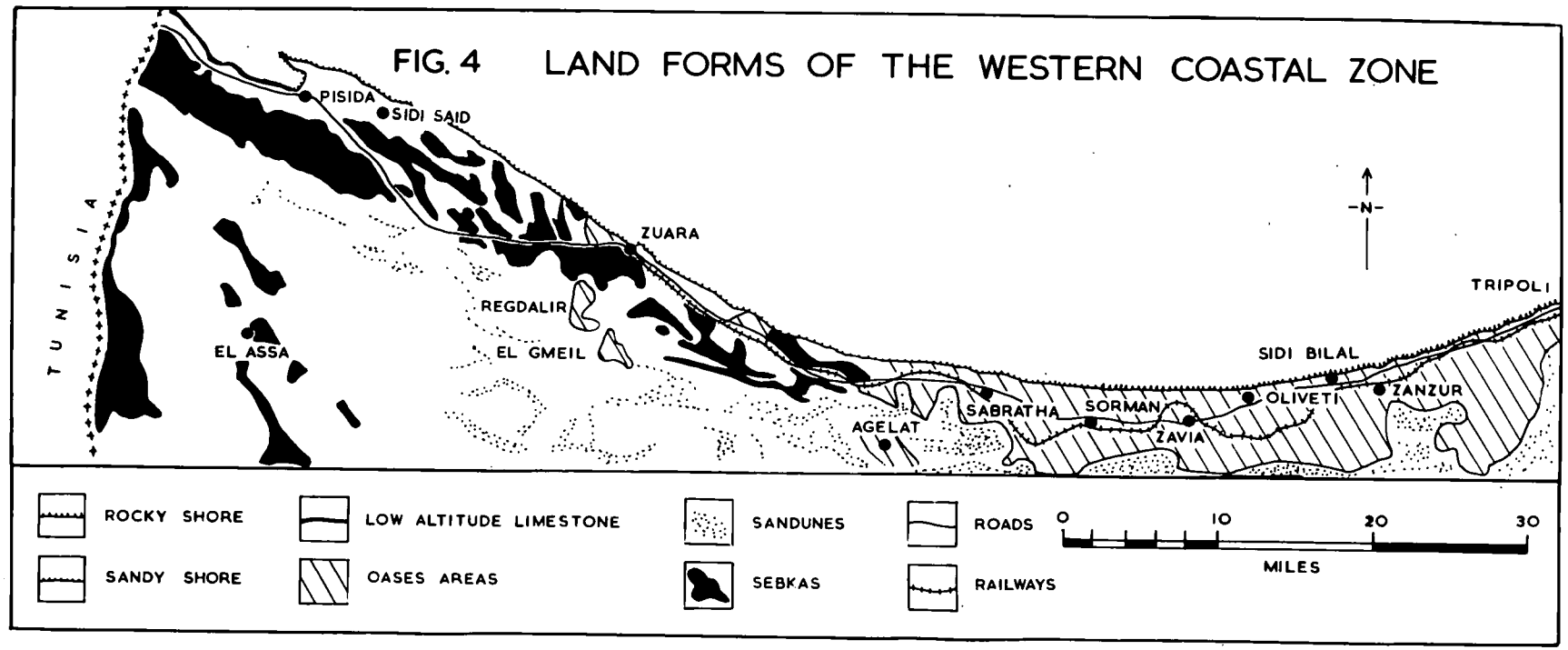


FIG. 4 LAND FORMS OF THE WESTERN COASTAL ZONE
TUNISIA
PISIDA
SIDI SAID
ZUARA
REGDALIR
EL GMEIL
EL ASSA
AGELAT
SABRATHA
SORMAN
ZAVIA
OLIVETI
SIDI BILAL
ZANZUR
TRIPOLI
N
ROCKY SHORE
SANDY SHORE
LOW ALTITUDE LIMESTONE
OASES AREAS
SANDUNES
SEBKAS
ROADS
RAILWAYS
0
10
20
30
MILES

shoreline; their starting point coincides with the administrative boundaries between Tripoli and the western district. The cliffs here are insignificant, but increase in height rather rapidly to the west. The highest point on this shore is found to reach about 45 metres above sea level at Sidi Bilal, while the average height is about 20 metres. The lowest cliffs on this shore are along about 3 kms. between el Maia and Gudaim-Oliveti, with an altitude of only 4 metres above sea level. However, the rocky nature is still marked in this area in spite of its lower altitude. One of the most important traits of this shoreline is that marine erosion is very well marked and has left small hollows used today as fishing stages known locally as Marsa, such as Marsa Zanzur, Marsa Dila, Marsa Sorman etc. Also the water along this shore is comparatively deeper than the water of the sandy shore to the west.

(b) Sandy shore from Marsa Sorman to Bu Chemasc-Pisida

The rocks disappear and are replaced by a chain or belt of sand dunes. The general height of the dunes is about 8 metres above the sea and its highest point about 25 metres, is found on the hill of Sidi Said. The area around Zuara presents the lowest altitude.

The formations of this chain of dunes are of a marine origin and are distinguished by their grey-white colour. These dunes in some places, Zuara for instance, are of great importance because they are the only source for fresh water in spite of the fact that they support no vegetation. This sandy shore is of much more importance than the rocky part from the fishing point of view. The harbour of Zuara, though it is artificially constructed, is the second port in the whole of Tripolitania.

The most significant phenomenon of this coast is the bay of el Gsir which

extends from east and south east leaving the peninsula of Ferua in the north. This creek is about 3 kms. wide at its maximum between Ferua and the shore of Pisida, while its depth varies from 8 m. to half a metre and its bottom is a bank of sand mixed with sea weeds. The peninsula of Ferua is a sand spit several kilometres long and less than one kilometre wide. The local people believe that this peninsula was once a flourishing oasis because of the remains of an old cistern and a trace of a cemetary; however today it is no more than a group of sand hills of about 5 metres above sea level supporting sparse vegetation of esparto grass halfa and a few wild palm trees.

(c) The remaining part of the shoreline between Pisida and the Tunisian frontier differs from the former two types. The formation of this part is of a hard limestone mixed with small amounts of clay. The altitude above sea level is even lower than the rest of the western coastal shoreline; the result is that only a very few small hollows are to be found which are of no use as fishing stages. The water resources along this coast are not only scarce but very saline. Lagoons are found quite often as well as large Sebkas very close to the shore.

(2) The oases belt can be divided into two parts:

(a) From Tripoli to Agelat is a continuous strip of land well developed as a result of its abundant water resources and its higher precipitation. The sizes of the oases in this strip are varied and their southern limits are bounded by a chain of sand dunes. The altitude above sea level of this strip, in spite of its local differences, is more or less the same; 18 metres at Zanzur, 20 metres at Zavia, 16 metres at Sorman. The northern boundary of this strip is defined by the Miocene rocky formations of the shoreline. The

main oases in this strip are (from east to west): Zanzur, Saiad, el Maia, Gudaim, Zavia, el Harsca, Sorman, Sabratha and Agelat.

(b) From Agelat to the frontier. The oases of this strip are well separated by Sebkas, for instance, Sebket Smunden between Zuara and Pisida and Mellahet el Briga between Pisida and the frontier and a rather continuous group of Sebkas between Sabratha and Zuara. But, with the exception of Zuara, the oases are generally of minor importance either in agricultural production or in the number of people they support.

(3) The Sebkas This type of land is found everywhere in the western coastal belt as the following statistics indicate:-

Locality	The area of Sebkas in hectares	%
Zanzur	-	-
Zavia and Sorman	550	Less than one per cent
Sabratha and Agelat	750	1.6%
Zuara	4,250	30%
Total:	5,550	

It is clear however that the area of these salt marshes increases rapidly to the west to a maximum west of Zuara to the Tunisian frontier, where they become the main landform. Some of these Sebkas are used for producing salt and are known locally as Mallaha. The word Sebka itself means locally the wasted land, which supports no vegetation except some small bushes such as Salicornia Fruticosa, Suaeda Fruticosa and Farkenia used for grazing camels and

goats.

The salt marshes along the shoreline which form small lagoons are formed by the sea infiltrating into those depressions, while the internal Sebkas are closed basins the floors of which are very rich in sodium chloride and magnesium. During the winter time these closed basins become flooded but in the hot period of the year, the water evaporates leaving mineral deposits which in most cases form a real Mallaha. In other words the proportions of mineral substances in the soil really determine the difference between the Sebka and Mallaha.

(4) The sand dunes south of the oases belt

This belt of dunes is continuous from east to west except in a few places where these dunes have been fixed by the Italian government for their colonization purposes, as in the area between el Hascian and Mamura villages. This belt of dunes is of a different origin from the coastal dunes; this formation is in the first place from continental sand blown by the winds from the Sahara in the south. Their dominant colour is reddish as a result of the comparatively high iron content. The following figures show the areas of these dunes in the western coastal region.

Locality	Area of dunes in hectares
Zanzur & Hascian	3,500
Zavia	1,500
Sorman	4,000
Sabratha & Agelat	5,600
Zuara	13,800
Total:	28,400

Unfortunately only a small part of these dunes has been fixed and to stop their movement which threatens the nearby cultivated areas, it is very

important to increase fixation. The efforts of the forestry department in this field have shown good results in the small areas that have been already fixed. The afforestation of this belt of sand will give a big supply of fuel which is very rare in this region and the trees will also act as windbreaks to protect the oases belt from the southern hot winds.

According to C.F. Parona(3) "Le oasi hanno in questa zona di sabbia che le recigne il segreto della loro estensione e floridezza se non della loro esistenza, penchi le migliaia di pozzi che loro danno vita con ogni probabilita lo riserva piu copioso nelle masse sabbiosa delle dune, che assorbano tutta l'acqua di pioggia e lo conservano e protèggono della dispersione per evaporazione" that in spite of the unfortunate situation of these dunes which prevent the extention of the oases to the south, they act at the same time as reservoirs to keep these oases flourishing by supplying water to the numerous wells along this coastal strip. However the existence of these dunes under the present situation without being afforested is a real problem to any further agricultural expansion. Therefore it would be of great importance to the economy of the country to pay more attention than at present to afforestate these large waste areas.

C. SUPERFICIAL DEPOSITS AND SOILS

The soils of the western coastal region are not different in origin from those of the Jefara to the south. Local characteristics were caused by the nearness of the phreatic water table and also by artificial irrigation. As P. Principi(4) states "Il suolo dèi giundini, o dele oasi, e seplicemente il Terreno stepico transformato per la muggior vicinanza della superficia della folda freatica od in sequito alla irrigazione artificiale".

Apart from the Sebkas, the soils of the western coastal belt are generally

derived from fine wind-blown sand and are widely classified as sandy loams and loams with the largest areas belonging to soils classed as sand. However, it is worth mentioning that no scientific classification of the soils throughout the whole of Tripolitania has yet been made.

Beside the oases soils which range from sandy loam and loam three other types of soil - using the term in its largest sense - are widespread: first the sebka soils which are very saline and therefore support no vegetation; secondly pure sands which form the dunes whether on the shoreline or inland; and thirdly patches of croute (calcrete) caused by capillary action and precipitation of calcium carbonate after the water evaporates. However croutes are rarely found and because they are very hard to till they are in fact not used.

As far as agriculture and human activities are concerned, the only soil type of great importance are the garden soils which vary from sandy loam to loam. This kind of soil contains very little humic material which enables moisture retention within the zone where plant roots can effectively utilize it. It is also very poor in all the plant nutrients especially nitrogen. In addition extreme porosity permits the water to sink rapidly beyond the plant root which means a higher water requirement, and granular structure causes it to be easily eroded by either wind or water. In spite of all the above disadvantages this sort of soil has some redeeming features. It is easy to till with the primitive means available to the indigenous population. Secondly, the presence of a hardpan at varying depths prevents the water from penetrating into underground areas and accounts in a large measure for the success of olive and other trees which are able to send roots to a sufficient depth to utilize the moisture above this hardpan.

A. Broc [5] used the following textural classification for a study of Tripolitanian soils:-

(a) Sandy : contains less than 5% clay

(b) Light : contains between 5 & 15% clay

(c) Average : contains between 15 & 25% clay.

(d) Heavy : contains between 25 & 35% clay.

(e) Very Heavy : contains more than 35% clay.

He describes the soils from the Tunisian frontier to Tripoli city as follows:-

(1) "From the Tunisian frontier to Zuara, the soils are either made up of sebkas or of a very light soil on arable land. Cultivation in areas near the coast requires some protection against sea winds as well as other winds. Although the soil is very light it is possible that the percentage of clay in depth is greater, therefore it is more favourable to almonds and palm trees than olives."

(2) "Regdalin and Ghmeil areas where soil is very light at least on the surface. Some gardens exist in the dunes where fresh water is available."

(3) "Sabratha area including Agelat. The soil in general is light in spite of the fact that the whole area is entirely planted with 20 yearold olive trees. Only in some places the soil is very light which means that almond trees must be planted in lower ground."

(4) "The area between Sabratha and Tripoli is one of the richest of the country and where both indigenous and Italian farmers have proved their successful farming. The soil here varies between light and average."

The proportion of the organic materials in this region varies from 0.3% to 0.1% while the calcium proportion ranges from 6 to 10% and all the above types of soil are very alkaline.

All soils suffer from a lack of organic matters and nitrogen partly due to shortage of animal manure and although they are the best available they are very poor and infertile. Therefore they must be treated very carefully and more utilization of the chemical fertilizers should take place. The majority of the native farmers practically know nothing about them. So in order to increase the agricultural production in this strip of land which supports nearly one tenth of the whole Libyan population, a complete soil survey should take place in the near future and the results of this work should be made known to the farmers.

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P A R T I

CHAPTER II

CLIMATE

CLASSIFICATION OF CLIMATE

Classification of climate is extremely difficult due not only to the lack of abrupt regional changes, but also due to the numerous climatic elements to be considered. Thus the climate of the western coastal zone has been classified differently by several prominent authors.

According to Austin Miller's climatic types the whole territory falls within his group VI part one, which he called the hot desert climate.

De Martonne's classification puts the whole libyan coastal zone within his group II (Sub tropical) and the rest of the country is placed within group V (desert). The same applies to the Trewartha classification in which the Tripolitanian coastline falls within his group II part II which he called the low latitude steppe. Such classifications in which the coastal zone is placed within the steppe zone are followed too by Thornthwaite who gave it the name of the semi-arid climate DBS.

On the other hand, Koppen's divisions give a narrow strip along the shore which falls within the division VI which has the name of Mediterranean Climate CSA or as he called it the Oliven Klima (Olive climate). Such a classification is also given by A. Fantoli who took special interest in studying the Libyan climate.

The Tripolitanian coast is distinguished by one of the deepest bays on the African continent and because of its low latitude it forms an open doorway from the Sahara to the sea, while the Jebel of Tripolitania lies in an arch facing

north east between Shott el-Jerid and Homs. This situation of the coast makes it lie in the rain shadow of the Atlas mountains. Generally speaking, the maritime region is never more than 8 - 14 kms. wide and this is because it is a transitional area between the lessening influence of the sea and the growing influence of the Sahara, although the annual curve of temperatures is not very different from that in Sicily or even the southern parts of Italy - Catania, Siracusa, Taranto - except that the maximum temperatures registered here are higher because of the Ghibli, a hot wind from the desert. Because of this the mean daily range is not more than 8°C and the annual range between January, the coldest month and August, the hottest, is between 12 - 14°C while the annual isotherm is approximately 20°C.(1) However, the above figures are indicative of the importance of the maritime influence.

Comparing this region with the adjacent steppe zone to the south, we find three main distinguishing factors: (a) Relative humidity (b) Nebulosity and (c) Evaporation.

(a) The annual average of the relative humidity in the western coastal zone is not very high, about 62%. Although it is not extremely high, sometimes, especially during the summer, humidity is rather excessive. The mean monthly percentage of relative humidity in Zuara for the year 1955, which is a fairly normal year, ranged from 73% in July to 64% in April, which gave her a yearly average of 68%. At Sorman, a few kms. inland, 59% was the yearly average. At el-Azizia the average of that year was only 50% which means that the relative humidity decreases rather quickly inland.(2)

Physically speaking, the high humidity may be considered as one of the climatic obstacles, because it makes the climate very depressing and reduces human activities. On the other hand a relative humidity of less than 10%

caused by the Ghibli winds may jump in less than half an hour to 90% when the Ghibli stops and the wind from the sea blows in.

(b) Nebulosity is very low on the average, below or equal to that in any other place on the shores of the Mediterranean. The low nebulosity average can be seen by examining the figures for Zuara in the year 1914 which is a fairly [illegible] year.(3)

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Totals
No.of clear days	19	14	16	19	15	20	28	30	22	23	20	19	245
No.of cloudy days	12	14	15	11	16	10	3	1	8	8	10	12	120

The above figures give 120 days of cloudy weather or in other words the percentage of clear days was 67%. The average for the whole maritime zone of Tripolitania is probably about 70%.

(b) The mean figures for evaporation are relatively low, but in considering its physiological effects we have to consider the intense transpiration especially during the Ghibli periods.

The climatic conditions therefore of this narrow coastal belt are favourable not only to the Libyan population but also to Europeans.

Meteorological Recordings

Below are listed the stages of former meteorological recordings:-

(a) The first meteorological data were noted in Tripolitania by Horneman during his journey to Morzuk 1799.

(b) The English Capt. Lyon leading a mission to Fezzan recorded some meteorological data, such as the wind direction, the temperatures, during the year 1819-20.

(c) Dr. Dickson who lived in Tripoli between 1819 - 1821 recorded the temperatures, the wind direction, nebulosity and the number of rainy days.

(d) More detailed data was recorded during the journeys to Fezzan by Richardson, Vogal, Barth, Duveysier 1861, the Mircher mission 1862 and more still by the French Consul in 1879 during his stay in Tripoli.

(e) Tremendous work was done by Prof. Ayra in the year 1891, when he was the head of Tripoli technical and commercial school.

(f) In the year 1909 Profs. Martinuzzi and Eredia published an article about the climatic conditions in Tripoli.

(g) After the Italians occupied the country, they founded permanent meteorological centres, but were restricted to the coastal region only because of the war with the natives; for instance the rain-gauges in Zanzur, Zavia and Zuara were put in action only between 1915 and 1920, as a result of what Prof. Eredia advised his government to do in this field after his mission to Tripoli between 1913 and 1915.

Nevertheless the data collected before 1924 was not completely accurate and perhaps the year 1938 was the exact starting date for receiving correct data. Therefore only a short period is available for ascertaining averages.

Rainfall

The maritime zone lying west of Tripoli city, the western district, is one of the most important areas in Tripolitania because of the population it supports as a result of its agricultural productions. Although the climate is Mediterranean, the rain is of great importance for both irrigated and dry farming agriculture. As far as the irrigated agriculture is concerned, the rain is the main resource for underground waters, which is the only supply for irrigation, there being no surface water. Its importance is more obvious, where dry-farming is practised. That is why the rain brings hope, happiness,

wealth and food to all sorts of people and it is not surprising that the average number of hospital patients falls during the rainy season. The only disadvantage of the rain is the loss of the date crop if it falls during their harvest. Generally speaking, the whole amount of rainfall is restricted to the months from October until March, the cooler period of the year. The heaviest rain falls during December and January. The ratio of rainfall between the two months being 10 : 8. The rainfall of these two months equals the total rain of the other four rainy months; October, November, February and March. At the same time we find that February's rain is in the ratio of 4 : 3 with that of November. The total rainfall of the months from April to September does not exceed 8% of the whole yearly amount.

The rainfall of the western coastal region shows considerable annual variability, as the following figures indicate for Zavia town, the centre of this region.(4)

The Year	The Annual Average in mm.	Number of Rainy days.
1923/24	294.3	-
1924/25	539.0	53
1925/26	332.6	46
1930/31	176.2	31
1931/32	263.7	45
1932/33	454.4	38

For the same station and during the period of 1920/21 to 1951/52 the annual average of rainfall was 275.4 mms. with a monthly average as follows:-

J	F	M	A	M	J	J	A	S	O	N	D
64.1	33.9	35.8	7.6	4.2	2.0	0.2	0.1	8.9	21.7	30.4	66.5

Also the average number of rainy days for the same period was 41 days, which proves that the rain was torrential to some extent and fell when it was

not much needed, while the summer months were completely dry and hot. Therefore if we take into consideration the natural conditions such as the high porosity of the soil, the high temperatures, the dominant winds and the high evaporation, we find that the years of prosperity are few indeed. Consequently the drought years are well known and are caused by the lack and poor distribution of rain as well as by the Ghibli if it occurs at certain time and lasts too long. If no rain falls in November the earth will be too hard for sowing, and if it does not rain in March, when the crops, mainly cereals, are ripening, they will be in danger of being burnt up. Thus during drought years a drastic lack of food becomes certain and the prices go up resulting in a widespread of unemployment and perhaps even divorce cases exceed their average. The following years can be taken as the worst drought years in the last hundred years; 1871/72, 1881/82, 1921/22, 1929/30, 1935/36 and 1946/47.

The rainfall not only varies from year to year and from one month to another, but it also varies from place to place on the same coastal zone and even perhaps in the same area. Tripoli gets the heaviest proportion, more than 350 mm. of rainfall. (see fig. 5) The coastal region of Tripolitania as a whole from Misurata to Zuara has an annual average of 265.6 mms. of rainfall.

Thus we find that irregularity and variability are the most significant traits of the rainfall. These traits become more evident on further examination. For example in the year 1932/33 Zavia town had a yearly average of 454.4 mms. of rainfall, while Marsa Dila, which is only 3 kms. north of the town, had an average of 510.0 mms., despite the fact that the difference in the altitude is insignificant(6). Nevertheless the annual averages here are practically the same. The difference in rainfall becomes more evident only

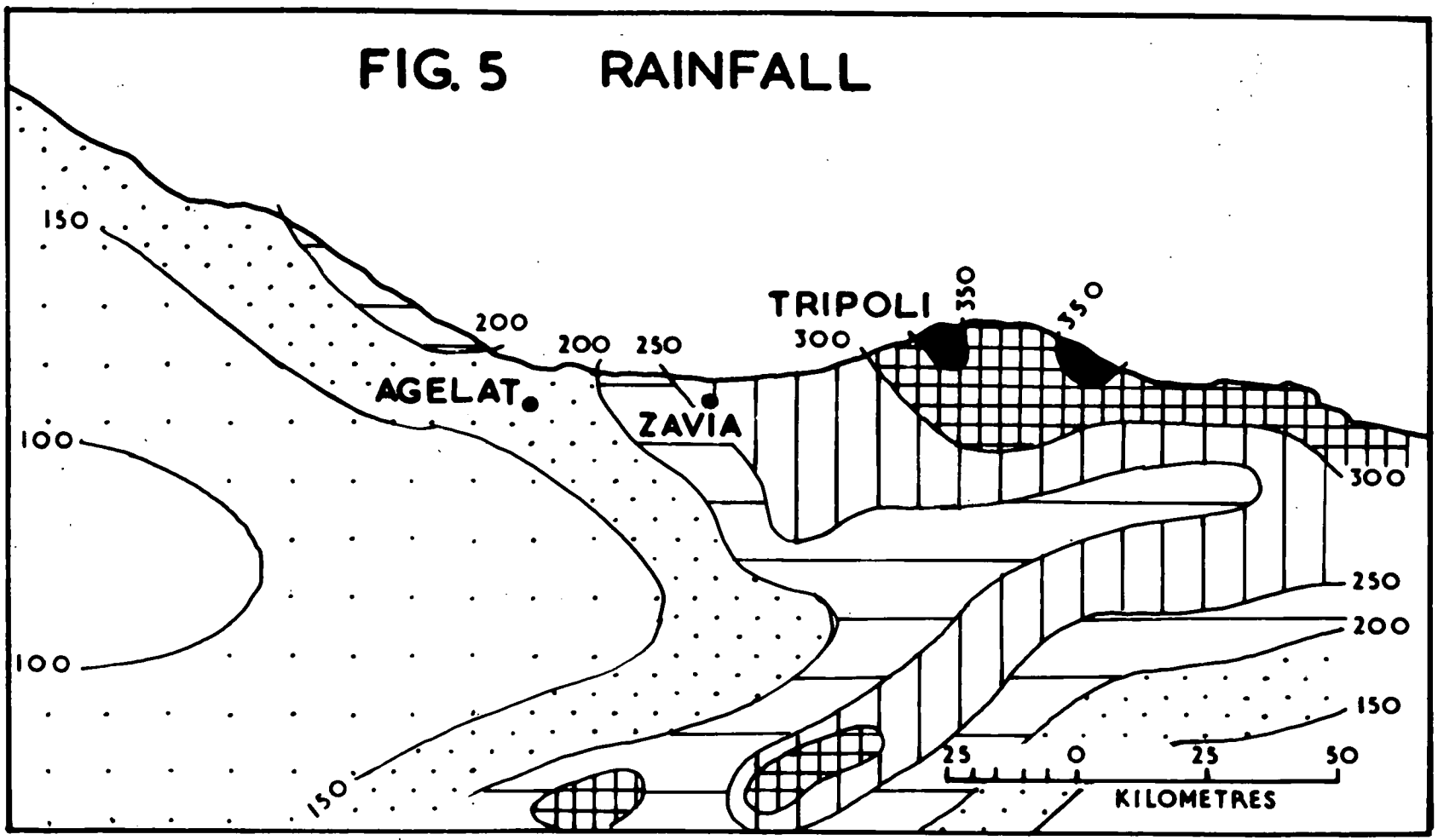
FIG. 5 RAINFALL
150
100
100
150
200
200
250
AGELAT
ZAVIA
TRIPOLI
300
350
350
300
250
200
150
25
0
25
50
KILOMETRES

5 kms. south of the town at the Negila, which has a yearly rainfall average of only 251.8 mms. or in other words a decrease of about 24 mms. of rainfall in such a short distance.

However, the decrease is not only restricted to the south of Zavia, but also extends to the west. At Sorman, which is only 15 kms. west of Zavia, the rainfall declines to only 214.9 mms. per year. This striking phenomenon becomes clearer at Agelat which receives a rainfall annual average of only 182 mms. The monthly averages for Both Sorman and Agelat are as follows for the period 1928 to 1939.(7)

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Annual Average
Sorman	48.6	28.3	19.6	9.3	0	0	0	1.5	9.9	15.7	30.0	53.0	214.9
Agelat	32.1	24.9	16.6	8.6	0	0	0	2.9	2.9	15.9	30.5	48.1	182.5

Along the coast and between the former two stations lies the centre of Sabratha with a yearly average of 223.4 mms. of rainfall. Once again at Zuara the rainfall increases to an average of 223.2 mms. with a monthly average as follows for the period 1920 to 1940:-

J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
40.6	44.6	25.6	5.0	0.1	0	1.3	6.0	10.1	19.4	27.4	43.3

At a distance of 40 kms. west of Zuara or at Bu Chemasc, the rainfall decreases to 184.1 mms. and if we travel to the south el-Assa, the decrease becomes more obvious 138.5 mms. only. The monthly averages for the two former places are as given below for the period 1920 to 1940.

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Totals.
Bu Chemasc	34.8	23.8	21.5	8.8	2.7	0.3	0	0.2	3.8	12.0	44.0	32.2	184.1
el Assa	23.7	24.8	20.0	8.3	3.0	1.9	0	0.3	4.8	10.4	18.1	24.2	138.5

These are the rainfall variations at the western part of the area (west of Zavia). The second part which lies between Zavia and Tripoli city includes the following centres: Oliveti, el-Maia, el-Hascian, Saiad, Zanzur and Bivio el-Gheran. This part is more agriculturally developed than the western part due to its increasing rainfall. The annual averages are ranging from 386.8 mms. at Bivio el-Gheran, which does not much differ from the highest rainfall at Tripoli city, to a minimum of 234.3 mms. at Zanzur. Other averages are Oliveti 251.1, el-Maia 286.9, el-Hascian 291.3 and Saiad 267.9 mms.

The monthly averages for Bivio el-Gheran and Zanzur for the period 1920 to 1940 were:-

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Totals
Bivio el-Gheran	91.2	47.3	46.1	11.3	0.5	0.6	0	0.3	1.1	43.6	48.7	87.1	386.8
Zanzur	55.0	32.6	20.6	4.8	2.7	0.1	0	0	9.2	20.9	31.6	56.8	234.3

Thus we can say that the annual rainfall decreases west of Zavia town and increases eastwards, with a general decrease southward.

Temperatures

Variability is not a trait restricted only to the rainfall, but is also a characteristic of temperatures, though less so. The temperatures along the coastline of the western district do not greatly differ from place to place as was the case with the rainfall. But on the other hand the differences become more obvious travelling from the shoreline to the south.

The monthly averages of temperatures for Zavia town can be taken as an example for the whole area of the coastal belt west of Tripoli for the period 1913 to 1952.(8)

Month	Maximum average °C	Minimum average °C	General average °C	Extreme maximum °C	Extreme minimum °C
January	18.0	6.5	12.3	29.6	- 0.8
February	20.0	7.4	13.7	35.1	0.4
March	22.8	8.9	15.9	39.7	0.0
April	26.8	11.2	19.0	43.2	2.5
May	29.0	13.7	21.3	53.0.	6.0

Month	Maximum average °C	Minimum average °C	General average °C	Extreme maximum °C	Extreme minimum °C
June	32.6	17.6	25.1	49.0	9.3
July	34.0	19.3	26.7	51.7	12.5
August	34.3	20.4	27.4	52.2	13.0
September	33.2	19.4	26.3	47.2	10.0
October	30.6	16.6	23.6	47.2	5.5.
November	25.3	12.0	18.6	39.5	4.0
December	19.8	7.8	13.8	29.6	1.2
Year	27.2	13.4	20.3	53.0	- 0.8

Thus we find that the temperatures along this area range from a mean minimum of 6.5°C in January to a mean maximum of just over 36°C while the extreme minimum temperature is about 0°C and the extreme maximum is over 50°C.

If we compare these figures with those of Zuara we find that the mean maximum is less by 1.8°C which shows only a very slight difference between the shoreline and the centre of the area. The mean minimum shows much less difference 0.3°C. The decrease of the general mean is only 0.6°C with a yearly range of 13.3°C for Zuara. On the other hand if the comparison takes place with Azizia, which is about 40 kms. inland, we find the differences are mainly restricted to the extreme maximum and minimum as shown below:-

	Zavia	Azizia
Extreme maximum	53°C	58°C
Extreme minimum	- 0.8°C	- 3.2°C

Wind

Another climatic feature affecting the human activities is the wind. During the summer the country lies within the zone of north easterly trade winds, which are rainless, but in the winter their hold is disputed by the rain-bearing north westerlies, which characterize the winter climate of the Mediterranean. The following statistics show the seasonal distribution of the wind direction at Zuara for the year 1914.

The season	The wind direction (days)								The calm days
	N	NE	E	SE	S	SW	SN	W	
Winter	6	8	5	5	6	27	5	16	12
Spring	9	17	5	4	8	6	2	11	30
Summer	9	27	11	2	2	0	3	4	34
Autumn	12	13	9	19	14	4	2	10	8
The Year	36	65	30	30	30	37	12	41	84

The NE winds, which are the most prevailing winds are rainless, but as they blow from the sea, they are moisture-laden winds and in fact they do contribute to the ability of the region to support its level of vegetation. But at the same time, however, near the coastline they carry the salt, which limits the type of crops that can be grown.

The most important factor, which affects the human activities is caused by a certain type of wind blowing from the desert and called locally the Ghibli, or the southern wind. This sort of wind mostly prevails in Autumn and Summer. The total number of days of Ghibli varies from 15 to 60 days as shown by the number of days with Ghibli at Sorman for the years 1948 to 1952.(9)

The Month	1948	1949	1950	1951	1952
January	1	1	-	2	-
February	3	-	-	6	1
March	-	-	2	6	5
April	5	2	5	6	7
May	9	3	7	7	4
June	3	1	4	9	10
July	3	-	-	4	6
August	-	-	2	8	4
September	3	-	4	1	15
October	4	-	2	3	7
November	-	4	-	2	-
December	-	1	3	-	6
The Year	31	12	29	54	65

These winds are hot and dry, parching the soils and vegetation. In the hot months of the year they raise the temperatures excessively. If they occur during a critical period in the plant's growth, the effect on yields may be disastrous. These winds also carry dust and fine sand resulting in a lot of eye trouble and make the weather very depressing by a rapid increase in temperatures so reducing man's ability to work.

In spite of all the former disadvantages, the Ghibli has a redeeming feature, the dates benefit and their ripening is hastened. If these winds fail to come in the Autumn, the date crop may not mature properly, which decreases the quality and the total production.

Other Climatic features

The other climatic phenomena that occur in this maritime belt are:-

(1) Dew which occurs mainly from December until March is moderately frequent, although heavy dew does not often occur. However the dew is important as it helps the plants growth. The prickly pear fruits would not mature properly if the dew failed to come during their ripening.

(2) Fog occurs occasionally in the early mornings. For instance, during the year 1914 in Zuara fog only occurred on 18 days as shown below:-

J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Total.
3	4	3	0	1	1	0	0	0	2	2	2	18

Although fog does not occur frequently, it is believed that it helps the plant's growth to some extent.

(3) Thunder storms and hail are also rare and both are restricted to the rainy season. Although hail is very rare, when it comes it causes a lot of damage to the crops and sometimes when the hail stones are of

considerable sizes they do not merely destroy the crops but also kill the animals as in the year 1955. Crops found to be greatly affected by the hail are mainly tomatoes and green beans.

Climate and Man Past and Present

Whether or not there has been a change of climate in historic time is a question which has been often asked, but unfortunately a definite answer is very hard to provide. However some facts concerning climatic changes were given by archaeological investigation, which proves there is a major possibility of such change; examples are the remains of the ancient farms, which are frequently far inland, where cultivation is now difficult. Ancient cities that were built of a very fine stone both on the coast and inland. Also the description of Strabo of the woodlands on the promontory of Misurata, and that by Herodatus of the "Hill of Graces" at Msellata as a thick tree-covered area.

On the other hand, the natural conditions seem to disprove change. For example the zone of sand dunes in the eastern part of Libya have been found to grow 10 metres in length every year, which means it would need at least 30,000 years to make them reach the present length of 300 kms.

The facts are very difficult to asses, but certainly there was no change after the Christian era, which is why the Romans during the first and second centuries A.D. only cultivated the areas where rainfall was favourable. These areas have been found to be restricted to an approximate area defined by the 150 mm. isohyet, as shown by the remains of farms: which simply means that the Roman farmer depended on that low rainfall and on his skill in getting a higher value from these rains in a short time.

The agricultural development the Romans achieved did not stand for long

not because of the decline of rain but as a result of the severe attack made by a Tripolitanian tribe called Austuriani, which devastated the countryside destroying the crops, olives, vines and killing the landlords at the end of the fourth and the beginning of the fifth centuries A.D. This can be taken as the time for a real decline of Tripolitanian agriculture, from which there was no revival until the Italians started a new regime a few decades ago. The final results of the Italian agricultural schemes are still doubtful in spite of their great efforts in this field.

The unchanged climatic conditions throughout the last two thousand years in addition to the country's prosperity that the Romans achieved mainly on the basic principle of dry farming, proves that the present difficulties must be man-made and therefore there is a more hopeful prospect of their improvement once again by human efforts.

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PART I

CHAPTER III

WATER RESOURCES

A. SURFACE WATER

In an arid country like Tripolitania, water of any kind plays a most essential part in the country's life, especially when agriculture dominates the way of life. But unfortunately, as a result of the very limited and irregular amounts of precipitation, there is no surface water in Tripolitania as a whole and the western coastal region in particular, as can be seen by the complete absence of the wadis in this belt. The following two reasons account for this:

(a) The Jebel of Tripolitania is at this point furthest from the coast, and in addition this part of the Jebel receives much less rainfall than the eastern part.

(b) The Jefara plain, between the western coastal belt and the escarpment is more sandy than the eastern part and in fact there is a line of sand dunes which divides the oasis belt along the coast and the Jefara plain itself. Thus, it is very difficult if not impossible to conserve surface water in this region, as the run off is negligible in the sand dunes. Moreover, the irregularity of precipitation which is to some extent torrential as well as the structure and porosity of the soil are not favourable to wadi flow.

The striking phenomenon of the complete absence of surface water was from pre-historic times a real obstacle for agricultural development and expansion which led the Roman farmers to rely on the principle of dry farming. However, it was inevitable for them to go underground for irrigation water not only in this region, but throughout the whole of Tripolitania and the

result was that Tripolitania became the so-called granary of ancient Rome.

Although the subterranean water was known before the Romans, it is believed that they first took full advantage of using it for irrigation purposes on a comparatively large scale.

B. UNDERGROUND WATER

Prior to the Italian occupation of this country in the early part of the second decade of this century, the only source of underground water which was known in this western belt was what is called now the shallow or phreatic water layer. This layer is found at varying depths according to the height above sea level and the distance from the shoreline.

In spite of the great efforts made by the Italian government to survey the underground waters of the whole territory, the present day knowledge is still far from being complete.

The supplies of underground water in the western coastal region and even the Jefara plain to the south are accounted for by the following factors:-

(1) Direct infiltration of rains through the sandy soils.

(2) Condensation of the atmospheric humidity at nights in the form of dew.

(3) Sinking waters from the escarpment to the north, as most of the wadis flowing down from the Jebel to the western Jefara vanish before they reach the sea. This phenomenon according to Archambault accounts for the large quantities of underground water which feed both the Quaternary and the Miocene water tables. But on the other hand Prof. Lipparini believes that these sinking waters from the escarpment feed only the artesian water table of the Miocene.

In the country of Tripolitania with its comparatively high aridity and

with no mineral resources and only the hope of petroleum, the future is entirely reliant upon the intensification and expansion of agriculture. But whether there are enough subterranean water resources to supply the present and the future agricultural expansion is not clear yet. Therefore, a full scale study of these waters should take place as soon as possible to determine the distribution, quantity and quality; only then can the present day fears be discarded or endorsed.

TYPES OF UNDERGROUND WATERS

The western coastal region is rightly considered one of the best areas in Tripolitania as far as the underground waters are concerned. Therefore, the possibility of agricultural extension is great as soon as the capital for this task can be provided, which in fact presents the real problem and not the water supply as further explanation will show us.

The oldest underground water layer known to the people of this region is the shallow or the phreatic layer. This source of water is that which the natives have long used to practise their irrigation purposes. But when the Italians started their settlement schemes, they found that the quantity of water from this source was not sufficient. The result of their search led them to find a more abundant water layer beneath the first layer and it was named the second or the semi-artesian layer. This layer is of great importance to Italian agriculture as a result of its big yield and its better quality. The high cost of raising water from wells whether from the phreatic or the second layer, in addition to the limited quantity, forced the Italians to exploit the possibilities of finding artesian waters. The results were promising and many artesian layers have been found.

We shall now examine in detail these three subterranean water layers of the western coastal belt.

(a) The Shallow or Phreatic layer which is often known as the fresh water layer. This layer is rightly considered the main source for the numerous Arab wells, which have a capacity of 4 to 8 cubic metres per hour. These wells are generally at a depth of 5 to 10 metres, are about 3 metres in diameter, and are lined with masonry. The depth of water in these wells ranges from 1 to 2 metres and it is lifted in a crude leather bag locally known as the dalu. (see plate I) The animals which provide the lifting power for these wells are mainly cows, donkeys and in a few cases camels. (see plate II)

The yield of a dalu depends on the depth of the well, the weight of the dalu, which generally varies from 30 to 50 kgs., the quality of manufacture and the animal power. Some of these wells have two dalus one next to another operating in the same direction. In such cases two storage tanks are used. (see plate III) It is very rare to find two wells in one garden.

It has been estimated that there is a well for about every 9,000 square metres which represents the average area of an Arab Garden locally known as Sania.

The water of this layer generally contains salt and more impurities than the second water layer. Although the water in most cases is not good for drinking, generally it is of great value for irrigation purposes except in a few cases around Zuara where it contains traces of sea salt, consequently it has been described as brackish water. But on the other hand some people prefer to call the phreatic waters in general as well as the artesian waters, brackish waters. According to this description the brackish waters have been

classified by U. Marroni for irrigation purposes as follows:(1)

(1) With up to one part per thousand of sodium chloride, the water is very good and suitable for all crops.

(2) With 1.5 to 2 parts per thousand of salt, delicate plants, Citrus trees forinstance, must be excluded.

(3) With 2 to 3 parts per thousand of salt, irrigation must be for salt-resisting or halophilic plants such as palm trees.

The salinity of the phreatic waters of the western coastal belt between Tripoli in the east and a few kms. west of Agelat is generally about one part per thousand. This part of the region is rather well developed and all sorts of crops can be grown, while in the rest of the area west of Agelat irrigation takes place only where the water is not too saline for example the small areas south of Zuara such as Regdalin and Emeil oases where fresh water can be obtained from the sand dunes. In other words the area west of Agelat relies on dry farming with supplementary small irrigated areas, while irrigated agriculture dominates the area east of Agelat.

The unfortunate low quality of the water resources in the western part of our region presents a real obstacle to any agricultural development. Moreover the centre of Zuara faces the serious problem of how to provide a fresh water supply for the domestic purposes of the ten thousand inhabitants. The present fresh water supply which is unfortunately the only one in use is derived from the shallow wells found on the sand dunes along the coast of this place. The total yield of these wells is about 136 cubic metres per day which is far less than the daily consumption and any further pumping will increase the salinity. The small supply of fresh water is a compulsory reason for using the brackish

water as a complementary source to cover the daily consumption. The total amount of this second source is about 60 cubic metres per day.(2) No recent surveys have been made in spite of the fact that the present fresh water supply may be exhausted in ten years time. Therefore it is very important that such a survey should take place in the early future, as there is no way of keeping this centre functioning normally without an adequate permanent fresh water supply.

The following figures show the number of the Arab wells in the oases of the western coastal region:(3)

Locality	Number of Wells
Zanzur	1,762
Mamura	125
Zavia	2,465
Sorman	1,031
Sabratha	1,260
Agelat	623
Zuara	2,766
Total:	10,032

The totalnumber of wells in this belt is about one third of the number of Arab wells in the whole of northern Tripolitania. Nearly 10% of the above figure are out of action for different reasons, such as the damage to the well, the storage tank or even both of them, and in a few cases because of the people deserting agriculture as a permanent way of life.

The number of shallow wells in all the Italian farms of this region used for irrigation is very small indeed compared with the above figure.

Locality	Number of Wells
Zanzur	23
Zavia	38
Sorman	32
Sabratha	8
Total:	101

The indigenous system of irrigation is known to be very primitive, but it should be noticed that the yield of the dalu is not necessarily poor and it may be preferable to improve on this system than to bring in equipment not well adapted to native irrigation. The oasis land which is divided into small gardens often owned by a few people is usually well cultivated especially with olive and palm trees. Such lands would not benefit by changing the irrigation system to a mechanized one in spite of the high investment. The idea could be perfect when new lands are developed; Mamura Village is a good example. The depth of the wells in this village ranges from 6 to 10 metres. Diesel pumps are the means for lifting the water from these wells and they are of 1.25 to 1.8 h.p. The output ranges from 26 to 30 cubic metres per hour, with an average of 200 cubic metres per day for each farm. The sizes of these farms are small - four hectares each - but as a result of the comparatively high water output together with the whole area being irrigable and also the disappearance of the fragmentation, these farms are capable of producing a good yield, especially of cash-crops like groundnuts, tomatoes, potatoes, etc. These crops which are important to the national economy are not entirely suitable in the oases gardens where cultivation is devoted to the production of small amounts of different crops mainly vegetables for home consumption, irrigated palm and olive trees and, perhaps more important than all, forage crops, mainly lucerne, to feed the animals, especially cows which are the means for lifting the water from the wells.

Irrigation from the Arab wells is carried out by flooding the irrigated plots - Jedawil (Sing.Jedula) - which are of about 1.5 to 2 square metres and are rectangular as far as possible. The main irrigation trenches - Sakiyah - radiate as far as 200 metres from each well. The storage tanks - Jiabia -

usually have a capacity of about 25 cubic metres.

A great disadvantage of the local irrigation system at the present is that the quantity of water in these wells, due to their proximity, is very limited and ranges from one to two metres. During the summer, when irrigation reaches its maximum, no more water can be provided because of the primitive manual drilling processes, and a lot of time is wasted for a replacement of the drawn quantity. Therefore, a programme for providing more water in these wells, by using mechanical drilling methods would probably give an adequate quantity of water which no doubt will save a lot of time and give the opportunity to irrigate the crops at the right time. A second disadvantage of the local system is that the way of distributing the water by the present irrigation trenches, which are made from earthen ditches with a radius of about 120 metres from each storage tank, causes a great loss of water. It has been estimated that nearly 20% of the water is absorbed by these sandy ditches. Therefore it would be more valuable to replace these trenches by concrete ones or inexpensive pipes which would mean an increase by one fifth of the cultivated area using the same labour. A solution to these two problems would undoubtedly raise the incomes of farmers. About 12% of the total Arab wells in this belt are mechanized. Although the proportion is very small, it should be mentioned at the same time that this figure is comparatively high if we take into consideration the short time - about ten years only - since their use for the first time. However the figure is increasing rapidly as a result of the high competition among the indigenous farmers themselves and between them and the Italian cultivators, in addition to the great facilities in the form of credits given by the different companies dealing with agricultural purposes.

(b) The second or the semi-artesian water layer

This source of water is usually found at depths of 20 to 25 metres below the phreatic layer. The limited quantity available from the shallow layer and the necessity for a larger water supply for the new Italian settlement schemes were the two main reasons for utilizing this second water table on a large scale. The water of this layer is much less saline and is free from impurities compared with that of the shallow layer. Therefore it is much more suitable for drinking and irrigation purposes. The chloride proportion in this water ranges from 0.135 to 0.825 per thousand.

It is believed that the water of this layer is retained in a siliceous layer of sand lying between a clayey calcareous layer above and a Miocene clay layer below. In other words the ground water near the surface and along the coast-line is divided into two zones by a clay stratum.(4) The Arab wells are supplied by the first water table, while the second zone supplies the Italian wells. These two water tables are retained in the lower Quaternary deposits and are in fact independent of each other. The pressure of the second water layer is unfortunately not strong enough to cause gushing. The water of these wells rises about 20 to 30 centimetres above the water level of the phreatic layer and for this reason the description of semi-artesian layer has been applied to this water table. The water yield of these wells is considerable ranging from 100 to 300 cubic metres per hour. Despite this great output the wells are not found to be influenced by proximity.

The following figures show the total number of these second layer wells in the Italian farms of the western coastal belt. Figures were obtained from Zavia Agricultural Statistica. Department 1958.

Locality	Types and number of Wells			Total
	Electric Motors	Motor Pumps	Wind Pumps	
Zanzur	14	2	17	33
Zavia	202	136	14	352
Sorman	-	9	3	12
Sabratha	-	16	8	24
				421

Recently, comparative studies have been carried out to determine the cost price per cubic metre of water pumped by each of the former ways as well as the cost price of artesian wells. The results were in favour of using the artesian wells followed by the electric motors, then the motor pumps and in the last place was the wind pumps which were found to have numerous disadvantages, namely the irregular pumping, the need of building comparatively big storage tanks, the heavy expenditure for repairs and also their small output which ranges from 2 to 8 cubic metres per hour.(5) (see plate IV)

The irrigation system carried out by the Italian farmers is much more economical than the native system as it saves about one fifth of the water by using concrete pipes instead of earthen ditches (see plate V) and more by using larger irrigated plots. Perhaps more important is their use of the sprinkler system, or artificial rain (see plate VI) which has been estimated to save about 25% of the water needed to irrigate a certain area by using concrete pipes. In addition this system can be practised in places where it is impossible to use any sort of ditches as it does not need a complete levelling of the cultivated area. The increased production of groundnuts is due to this system of irrigation.

The demographic farms in the Judaim - Oliveti - area are the best demographic Italian farms in Tripolitania. The following figures regarding

the water cost and consumption in these farms may give a general idea of these two very important factors of present day agriculture carried out by the Italians in this region, which contribute considerably to the agricultural importance of the western coastal belt:

(1)	The capital cost of water per hectare.	£ 22.2
(2)	Capital outlay for supplying one cu.m. of water per annum.	£ 0.009
(3)	Amount of water per hectare per annum (cubic metres)	2,433
(4)	Running costs per cubic metre.	£ 0.21
(5)	Total capital cost of water installation per farm.	£500
(6)	The area irrigated annually in hectares.	3
(7)	The size of the farm in hectares.	30
(8)	The water per day in cubic metres.	200

The above statistics were given by the Survey of Land Resources, published in Tripoli 1945 by the British Administration Department of Agriculture.(pp.114-5 Increasing the agricultural production and especially the cash-crops depends entirely on increasing the water supply to 122 of these demographic farms. The water output can be increased by two means:

(a) Increasing the pumping hours to twelve hours per day instead of eight during the summer period, and at the same time reducing the cost price of electricity.

(b) Giving the farmers more credits and reducing the taxes to enable them to buy diesel engines for use as complementary means for lifting the water and also to buy the equipment for the sprinkler system if necessary.

The abundant underground water supply from both phreatic and semi-artesian layers is the main source for drinking and irrigation purposes for both the Italian and the indigenous population. The temperatures of the second water

layer range from 20°C to 22°C while the temperatures of the phreatic layer are comparatively lower and range from 19° C to 21°C.

The former two water layers especially from Tripoli city to Agelat are considered to be the richest water layers in the whole territory. Because of this fact the third water table or the artesian layer is actually out of use.

The Artesian Water layer

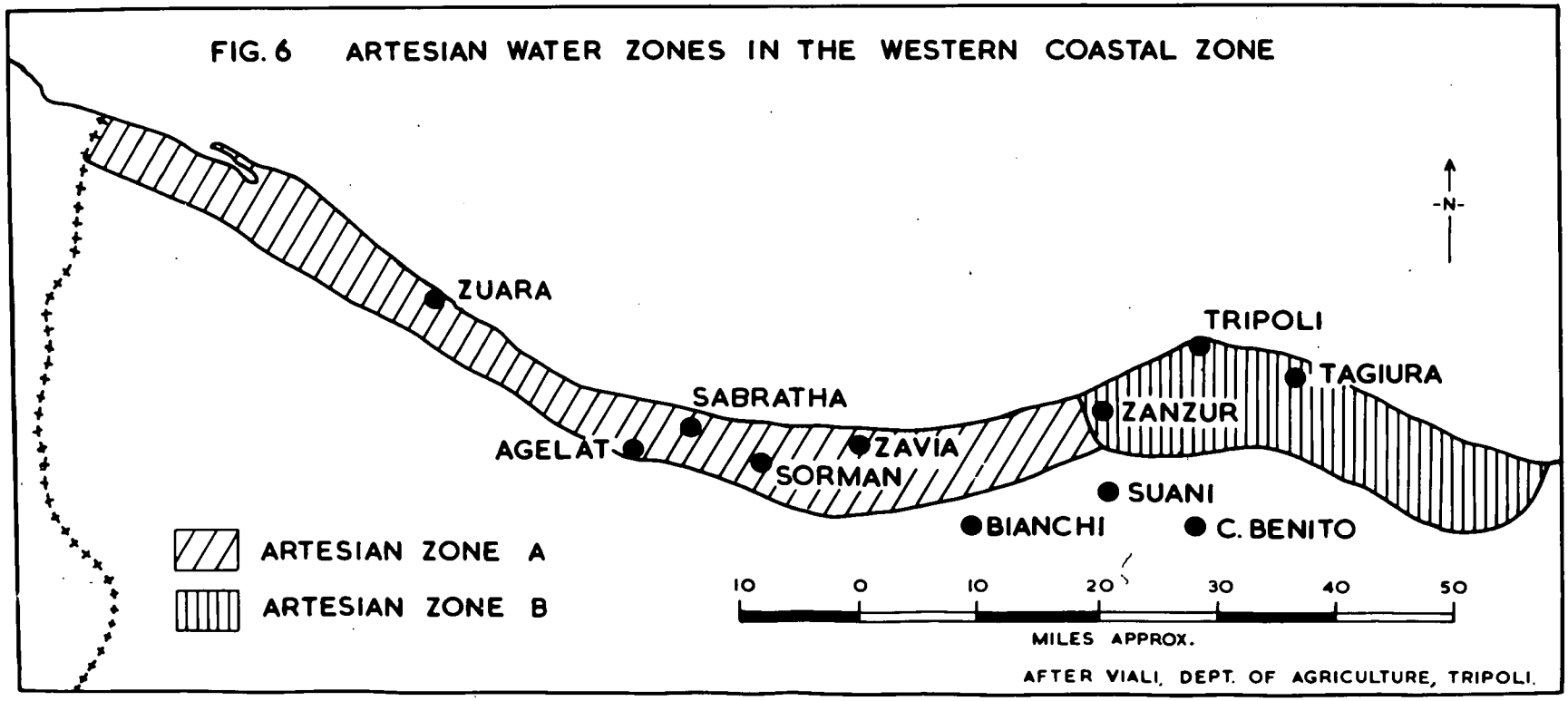
The Italian efforts to find artesian water were successful. The intention of their exploration was to find comparatively cheap water resources for their large scale settlement scheme and then to drill an artesian well every two square kilometres along the coast and every four square kilometres inland, but unfortunately the idea died when World War II broke out.

The Italian survey of artesian water though it shows the main layers in northern Tripolitania is still far from being accurate. The map of this survey shows three artesian layers in the whole of northern Tripolitania; the first lying completely in the western coastal region from Zanzur to the Tunisian frontier with an average width of 15 kms. The second between Zanzur and Garabulli includes the surrounding areas of Tripoli, while the third is found between Misurata and Taurga, therefore it has to be excluded. (see fig. 6).

The main artesian sources are believed to be derived from a transgressive water accumulation of the early Miocene epoch.

The western coastal belt, in addition to the abundant water which can

FIG. 6 ARTESIAN WATER ZONES IN THE WESTERN COASTAL ZONE



be obtained from both the shallow and the second water layers, is one of the best areas as far as the artesian sources are concerned. The two artesian layers found in this region are:-

(1) The layer between Zanzur and the Tunisian frontier. This layer is known to hydrologists as zone A and may be subdivided into two. The first, which lies underneath the Quaternary stratum, is found at depths of approximately 250 metres below the ground level. The water of this layer has a piezometric, or a natural head, at 27 metres above sea level. The output varies from 20 to 50 cubic metres per hour and although it is fairly low the yield can be increased to about 250 cubic metres per hour by employing electric pumps of about 8 h.p. The second layer has a greater value because of its considerable output which ranges from 70 to 300 cubic metres per hour. This second layer is found at varying depths, with an average of about 650 metres below the surface. The natural head of this layer reaches about 60 metres above sea level.

(2) The layer between Zanzur and Garabulli. The geographical position of this layer shows that only a small part of it is included in our western region. This part lies between Zanzur and the administrative boundaries between Tripoli and the western districts. In this zone, Zone B, only one artesian layer has been found. Its output varies from 300 to 350 cubic metres per hour and its maximum natural head is at 65 metres above sea level. The water of this layer gets shallower eastward while its quality gets better.

The abundant quantity of water available from the phreatic and the semi artesian layers in addition to their better quality, did not encourage the utilization of the artesian water supplies in this region. The artesian waters of this belt have been found to contain a great deal of mineral substances, especially sodium chloride, in addition to their high temperatures which simply means that these waters must be treated carefully before any utilization.

The following statistics show the characteristics of the artesian wells in this western belt:(6)

Locality	Altitude above sea level (metres)	Result	Temperatures.	Salinity %	Output in cubic metres per hour	Depth of the well in metres	Total depth in metres
Zuara	0.80	Positive	-	-	42	239.90	241.00
Agelat	-	"	46°C	-	120	799.00	812.00
Sabratha	19.00	"	43°C	1.814	100	591.00	664.00
Zavia	-	"	55°C	-	73	572.78	578.00
Oliveti I	-	"	44°C	1.447	270	563.00	584.00
Oliveti II	28,00	"	40°C	2.143	157	496.00	500.00
Zanzur	-	"	41°C	6,800	100	-	580.00

Beside sodium chloride other substances have been found in these waters; magnesium sulphate, sodium carbonate, sodium sulphate. The proportions of these substances differ from well to well and from place to place. The highest proportion of sodium sulphate was found in Zavia, more than two grammes per thousand. However these substances are of no harm to agriculture. The utilization of artesian waters in the villages of Crispi and Girda has proved

that artesian waters can be used for irrigation without any harm when the salinity is between two to five grammes per thousand, a yield of 24 quintals of wheat being common after three irrigations with these waters. This case proves that the artesian waters of our region can be utilized perfectly except in the case of Zanzur where the salinity is higher than elsewhere in Tripolitania. Therefore if we take into consideration the fact that the artesian waters, in spite of the high capital invested in the boreholes, are the cheapest waters we know that this source of water presents a very promising prospect for the future agricultural expansion.

The wells on the former list are still in good condition. However, there is no intention either on the part of individuals or the government, to use these waters, except in the case of Agelat where the Nazirate of Agriculture is trying to utilize this well for experimental purposes on forage crops.

A few other artesian wells have been dug by the Italians - some of them were positive and some were not. However they are out of action because of damage during the War.

Locality	Altitude in Metres	Result	Temperatures	Salinity %	Output in cu.M. per hour	Depth of the Well in Metres
Pisida	1.80	Positive	-	-	42	501
Saiad	24.00	"	30°C	0.969	19	252

The only two cases where drilling was negative were in Mellita and Mamura villages.

The situation of the different water resources of this region as has been described shows a considerable opportunity for further agricultural expansion; this expansion can be promoted by the following means:-

(a) Digging more shallow and semi artesian wells.

(b) Improving the present Arab wells.

(c) Developing artesian wells in selected areas.

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PART II

CHAPTER I

ETHNIC ELEMENTS IN THE WESTERN COASTAL ZONE

A. ETHNIC EVOLUTION

(1) The Berbers

No question arises about the origin of the Berbers as all the historians who have tackled the problem agree that they are a Hamitic race. Ibn Khaldun[1] believed that they belonged to Mazih ibn Kanaan ibn Ham. There are two confederations of Berbers[2], the Branes and the Madghis, coming from north and south of the Aures mountains in Algeria. The Branes are subdivided into ten branches:

(1) Azdagia	(2) Masmuda	(3) Aurba
(4) Agisa	(5) Cutma	(6) Sanhagia
(7) Auriga-Hawara	(8) Lemta	(9) Hascura
	(10) Czula	

The Madghis, which are also known as el-Betr, are subdivided into four branches:

(1) Addasa	(2) Nefusa
(3) Darisa	(4) Beni Lwata

The word Berber was probably used first by the Arabs to distinguish the people of north Africa whose language was not understood by the Arabs. Later on the word also was used by the Greeks and Romans and since then it became their common racial name. The Berbers were also known as Mazih after their language. E. Carette in his work "Recherches sur l'origine et les migrations des principales tribus de l'Afrique Septentrionale, Paris 1853, supposed that the word Berber was given by the Arab historians as a common name to all the people of north Africa and it is derived from the word Barbari which means to

the ancient geographers the people of Mauritania. However from the racial point of view, present Berbers of Tripolitania are derived only from the last four branches of the first group together with all the branches of the second group. The following notes show the distribution of the important Berber branches with special reference to those whose remnants are still to be traced in Tripolitania:

(1) Agdagia: in the Aures mountains in Algeria.

(2) Hascura: in Morocco.

(3) Auriga: who are also known as Hawara after their most powerful tribe, who played a great part in the conquest of Spain. Their elements are found in Morocco, Algeria and Tripolitania in Zavia, Zanzur and Tripoli. The names of Msellata and Garian are derived from two different tribes of the Auriga branch.

(4) Cutma: the only traces belonging to this branch in Tripolitania are found in Homs region.

(5) Sanhagia: elements of this branch in the country are in Mizda, Garian Kekla and Orfella.

(6) Addasa: remnants of this branch are also found in Homs and Tarhuna.

(7) Darisa: The biggest and most powerful tribe of this branch is the Zenata tribe whose elements are found in Jefren, Nalut, Garian and in the Jefara. Beni Chazrun who belong to this tribe were able to maintain their rule over Tripolitania for nearly one and a half centuries (1000-1149 A.D.). Another powerful tribe of this branch was called el-Maia. The name of the present oasis el-Maiain the Western Coastal belt is derived from it. A third powerful tribe

was known as Zuaga, the name is still used to indicate the area west of Marsa Sabratha and also the present tribe who live there. The Berbers of Zuara are also from the Darisa branch.

(8) Nefusa: the tribes of this branch lived in the area between the sea and the Jebel west of Tripoli city. The centre of Sabratha was their capital. The Arab invaders of the 11th Century pushed these tribes to the Jebel where they now form the majority of the people west of Jefren.

(9) Beni Lwata: their descendants are mainly in southern Tunisia while in Tripolitania they are found in Homs, Musurata, Msellata, Taurga and Zavia. Some people supposethat both words Libya and Leptis are derived from the name of this branch. However no reliable evidence has yet been given.

These Berber Tribes, who were the original inhabitants of North Africa, lived largely by hunting wild animals including elephants and gazelles. Domestic animals were introduced in prehistoric times; the horse for example in the second millennium B.C., on the other hand the camel was only introduced during the Roman occupation.

(2) Phoenicians and Carthaginians

The Phoenicians were a Semitic race who came originally from the Syrian shores. They were primarily traders and carriers rather than cultivators and pioneers of civilization, and they founded numerous trading centres scattered along the Mediterranean shores including those of Tunisia and Tripolitania. Phoenician rule in the case of the Tripolitanian coasts was confined to the exaction of tribute, the control of trade and the employment of mercenaries. They made little penetration into the interior, so their contact with the local people was insignificant at least from the ethnical point of view.

About 1100 B.C.(3) the Phoenicians founded what is called the three cities Sabratha, Oea and Leptis - which were located on the Tripolitanian Coast, partly because it was the most southerly point of contact for the Mediterranean sea traders with central Africa and Saharan merchandise. The Phoenicians maintained their rule until about 500 B.C. when the country came under the domination of Carthage, the principle Phoenician Colony in North Africa, which kept the country under her rule until about 150 B.C. when it was over-run by the Romans.

Caravan trade, whether with central Africa and Nigeria or with Sudan, was the main source of wealth. The Phoenicians and Carthaginians also took some interest in developing agriculture as a supplementary way of life to commerce and pastoralism simply because the majority of the people were nomadic tribes. Generally speaking, the Phoenicians, apart from introducing the olive and a few other trees along the coast, were mainly interested in safe-guarding their trade and trade routes.

(3) The Roman Period

The great struggle between Rome and Carthage was for the supremacy of the Mediterranean trade. In the year 146 B.C. Rome finally conquered Carthage who had been weakened, during the second Punic war 218-200 B.C., by a Tripolitanian Chief called Messinissa who had helped Rome against Carthage. Nevertheless, after the conquest of Carthage a change of attitude by the Berber Kingdom, founded by Messinissa, provoked the Romans to take the ports of Tripolitania as well.

During the Roman occupation Tripolitania enjoyed a period of peace and prosperity in spite of the fact that the nomadic tribes do not appear to have been influenced greatly by Roman rule. The Romans, who took great interest in developing agriculture because of the need of cereals especially wheat to

supply their mother Italy, found themselves threatened by the continuous attacks made by the tribes of the south like the Garamantis who lived in the Fezzan. However the Romans failed to subjugate the interior until the end of the second century A.D. In spite of the pressure brought on the Tripolitanian estates to increase cereal production, it is doubtful whether wheat was ever exported from Tripolitania. Along the coast Roman influence was so well marked that the native people adapted their municipal organizations to the Roman model and they were gradually accorded the rights of Roman citizenship.

The three cities founded by the Phoenicians now grew up considerably under the Roman rule. Sabratha, which means the wheat market, was a trade centre to the Sahara via Gadames, while the development of Leptis was linked with the caravan which came from the Fezzan via Socna. Oea took advantage of both routes in addition to being the capital. Pastoralism continued to play an important part in the country life but was now complementary to agriculture, because of the great efforts made by the Romans here to provide economic security even in the southern parts, as the remains of their farms show us. Besides cereals which were probably consumed locally, the country was famous for producing large quantities of olive oil, which no doubt was exported in large quantities. In other words the country prospered under the Roman occupation; it was rich in olive oil and wheat and there was a largetrade in horses, leather, wood and slaves. After this prosperous domination which lasted about six centuries, the country was devastated by the Vandals who succeeded in subduing the Tripolitanian coast in the year 450 A.D. In spite of their short rule, they devastated the achievements of the Romans. However, they were finally overthrown in the year 533 A.D. by the Roman General

Belisarius who had been sent to Africa by the Emperor Justinian. After this event north Africa was divided into seven provinces one of which was Tripolitania. However in spite of the fact that the towns were rebuilt and trade and commerce were restored, the country under the Byzantine rule did not flourish greatly. In the year 622 A.D. their rule came to its end when Omar ibn el-Aas overran north Africa and conquered Tripoli.

(4) The Arab Rule

Ethnical modifications to the Berbers from the Phoenician conquest to the Arab conquest were limited primarily because the Berbers were treated as an inferior race and of lower standard. The persistent revolts made by the Berbers throughout their past history show their hatred and disloyalty to early intruders. The Berbers also struggled long and hard against the Arabs even after their adoption of the Islamic faith, which was completed in the year 753(4) when the Berbers were forgiven the payment of tribute to the Moslem ruler. From the 7th until the 11th centuries, though the Arab rule was maintained, no important changes occurred to the racial composition of the Berbers largely because of the small number of Arabs who stayed permanently in the country, but also because they considered themselves of a higher race. This situation continued until the great invasions of the 11th century by the Beni Hilal, the first and most powerful tribe which entered the country, who were soon afterwards followed by another powerful tribe known as Beni Suleim. These two warlike tribes were sent in the 9th century(5) from Arabia to Upper Egypt by the Fatimits in order to eliminate their menace to the pilgrims. However the nomadic nature of these tribes caused a lot of agricultural damage in Egypt. When Prince Zarida el-Moiz of el-Kairawan proclaimed himself as a

Sultan under the Abbasid Caliph, the opportunity to get rid of these tribes from Egypt presented itself to the Fatimid Caliph el-Mustansir who encouraged these people to depart westwards by giving each family head a camel, Dinar and more important still giving them the right to rule the countries they conquer(6).

In A.D. 1051(7) el-Atbeg and el-Riah formed the vanguard of the Beni Hilal invaders spreading ruin over the countries which the Romans had left civilized. Later came the rest of the Hilalia waves, represented by Beni Zogba, Beni Gasham and el-Maakil in successions. Of the former Hilalia branches only the following three are considered as pure branches or tribes; el-Atbeg, Bein Riah and Beni Zogba; while el-Gashem and el-Maakil are groups of mixed descent. The majority of the descendants of these groups are found today in el-Magreb (Tunisia, Algeria and Morocco). However, because Tripoli was a famous trading centre with central Africa and because Tripolitania forms a very important travel route to the west, some of the Hilalia descendants are to be found here: The Maraboutic tribes of Zliten, Misurata and Msellata, the Sherif of Gmata and Ulad Bu Hmeira of Zavia.

The Beni Suleim also have five branches: Beni Auf, Beni Debbab, Beni Zegb, Beni Heib and Beni Yebid. The Beni Auf, Beni Debbab and Beni Zegb came to Tripolitania in the year 1066(8) after the successful outcome of the Beni Hilal invasion of north Africa was known, while both Beni Yebid and Beni Heib remained in Cyrenaica. Although the tribes of the Beni Suleim remained in Tripolitania for nearly a century, in the middle of the 12th century, they started to follow the Beni Hilal to el-Magreb in spite of the fact that they are of different stocks. Elements from the Beni Auf are still to be found in

Garian, Tarhuna, Misurata but the majority of them are found in Tunisia. In the case of the Beni Debbab some are found in the district of Tataonine while their descendants in Tripolitania are found in the Jiuari tribes of Sorman, Ulad Jarbua and el-Blaaza in Zavia, el-Nuail in Zuara, el-Mahamid on the Jefara and Ulad Sinan of Assaba. Elements belonging to Beni Zegb are mainly in the Fezzan, but include el-Miamin in Ursheffana. The distribition of the whole Arabic element as well as other elements in our western coastal region is shown on fig. 7.

The Arabs being nomadic and warlike people, sedentary life lost ground in the whole of Tripolitania and nomadic life developed once more. Commerce also declined in favour of political, religious and military aspirations. As the Berbers were subdued by the Arabs after a succession of severe battles and perhaps more important as a result of their conversion to the Islamic faith, the Berbers gradually became Arabized at least from the linguistic and religious points of view in the first five centuries. On the other hand there is little evidence of racial miscegenation before the 12th century; but since the 13th century changes in the Berber Ethnical composition became very obvious. A. Tigani, the Tunisian historian who visited Tripolitania in the year 1307 A.D.(9) reveals that the coastal region in Tripolitania has been greatly Arabized except in the case of Zuara which still maintains its Berber characteristics. However it is very important to realise that though the Berber language has gradually disappeared except in Zuara and some other places on the Jebel, this does not mean the disappearance of the Berber racial foundation of the majority of the population known as the Arab-Berber element.

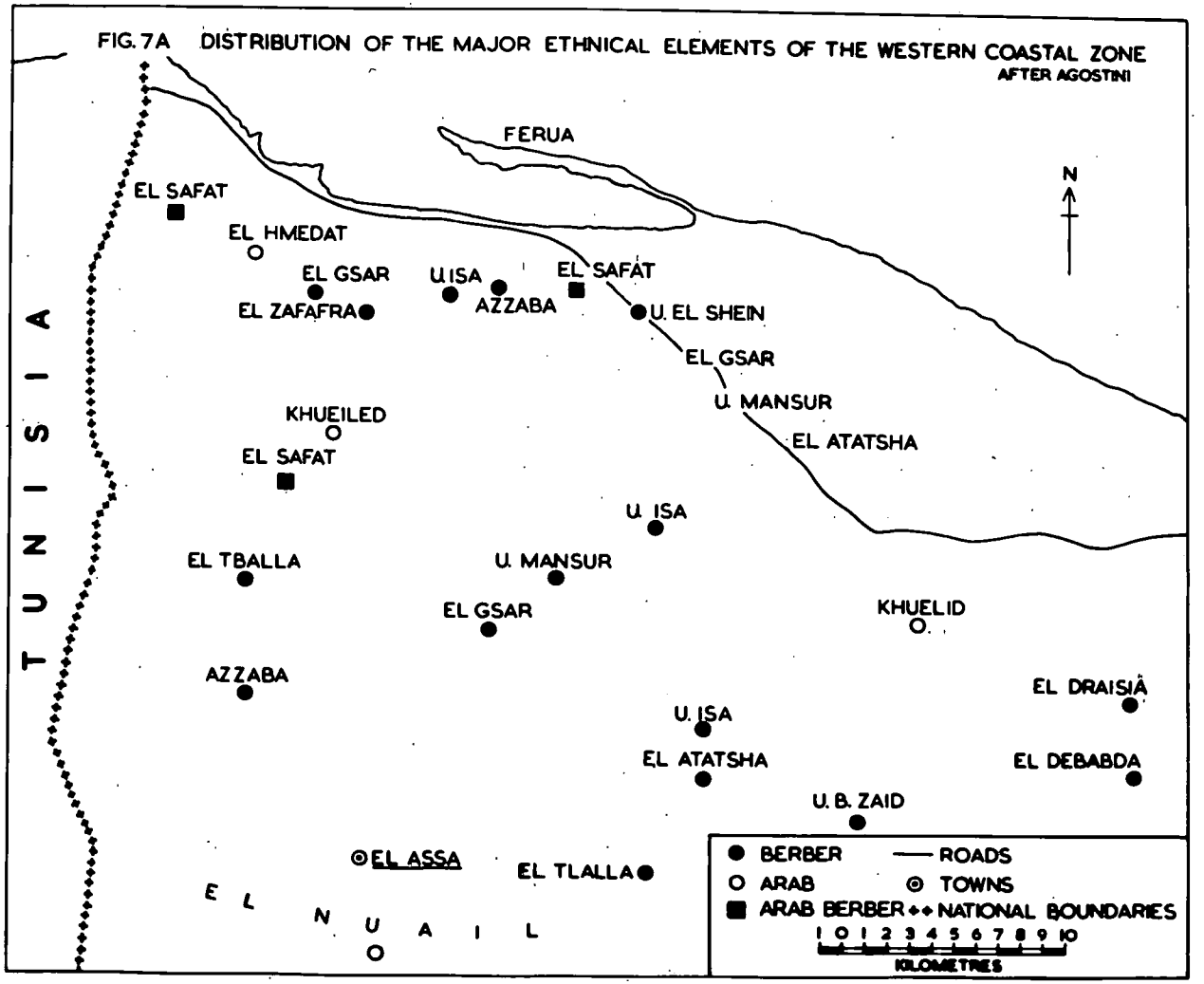


FIG. 7A DISTRIBUTION OF THE MAJOR ETHNICAL ELEMENTS OF THE WESTERN COASTAL ZONE
AFTER AGOSTINI
FERUA
N
EL SAFAT
EL HMEDAT
EL GSAR
EL ZAFAFRA
U.ISA
AZZABA
EL SAFAT
U. EL SHEIN
EL GSAR
U. MANSUR
EL ATATSHA
KHUEILED
EL SAFAT
U. ISA
EL TBALLA
U. MANSUR
EL GSAR
KHUELID
AZZABA
EL DRAISIA
U. ISA
EL ATATSHA
EL DEBABDA
U. B. ZAID
EL ASSA
EL TLALLA
E L N U A I L
TUNISIA
BERBER
ARAB
ARAB BERBER
ROADS
TOWNS
NATIONAL BOUNDARIES
1 0 1 2 3 4 5 6 7 8 9 10
KILOMETRES

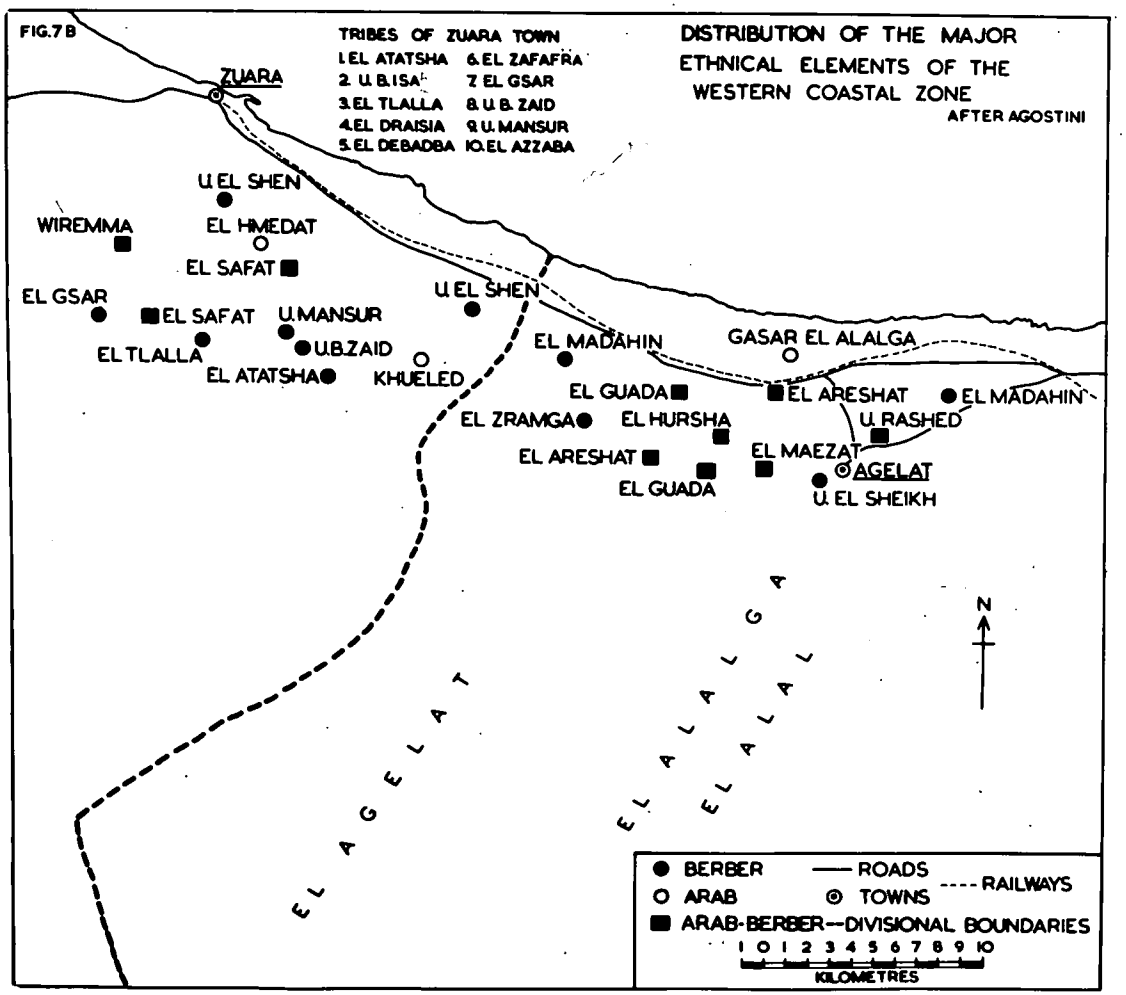
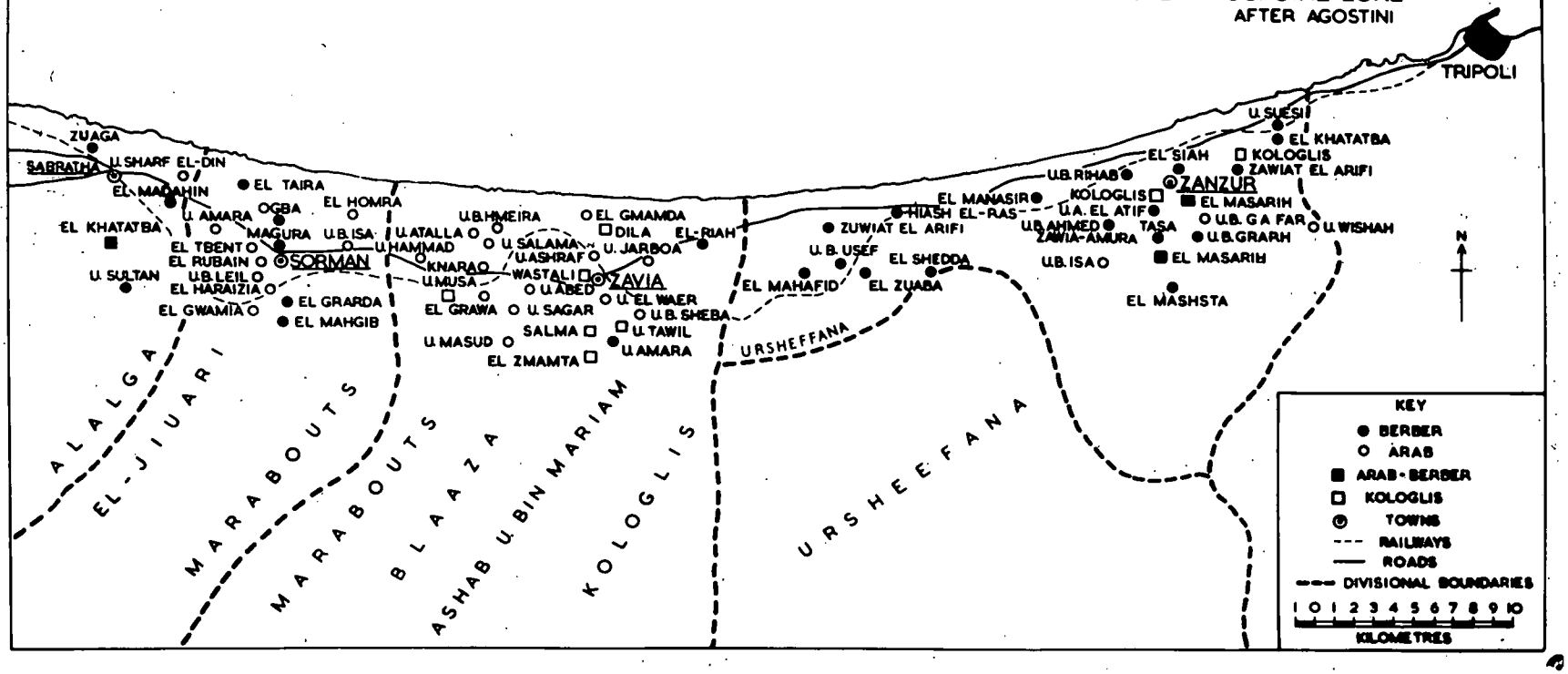


FIG.7 B
TRIBES OF ZUARA TOWN
1. EL ATATSHA
2. U. B. ISA
3. EL TLALLA
4. EL DRAISIA
5. EL DEBADBA
6. EL ZAFAFRA
7. EL GSAR
8. U. B. ZAID
9. U. MANSUR
10. EL AZZABA
DISTRIBUTION OF THE MAJOR ETHNICAL ELEMENTS OF THE WESTERN COASTAL ZONE
AFTER AGOSTINI
ZUARA
U. EL SHEN
WIREMMA
EL HMEDAT
EL SAFAT
EL GSAR
EL SAFAT
U. MANSUR
U. EL SHEN
EL TLALLA
U. B. ZAID
EL ATATSHA
KHUELED
EL MADAHIN
GASAR EL ALALGA
EL GUADA
EL ARESHAT
EL MADAHIN
EL ZRAMGA
EL HURSHA
U. RASHED
EL ARESHAT
EL MAEZAT
AGELAT
EL GUADA
U. EL SHEIKH
EL AGELAT
EL ALALGA
EL ALALGA
N
BERBER
ARAB
ARAB-BERBER
ROADS
TOWNS
RAILWAYS
DIVISIONAL BOUNDARIES
1 0 1 2 3 4 5 6 7 8 9 10
KILOMETRES

FIG.7C DISTRIBUTION OF THE MAJOR ETHNICAL ELEMENTS OF THE WESTERN COASTAL ZONE
AFTER AGOSTINI



(5) The Turks

At the end of the 16th century Tripolitania came under the domination of the Ottoman Empire. The Turkish governors did not show any real interest in developing agriculture mainly because they failed to maintain security. It is surprising that only the city of Tripoli survived, maintaining city life and remaining as a trading centre. Only the Karamanlis in the 18th century and also the Second Ottoman occupation in the 19th century did life in the interior become more peaceful and trans-Saharan trade more regular, till this traditional function was terminated by the development of British and French interests in the Gulf of Guinea at the end of the 19th century.

The Turkish domination which was maintained until the early years of this century has also left obvious traces of changes in the racial composition of the country. The Kologlis are the descendants of jannissairies(10) from different provinces of the Ottoman Empire and native Arab or Berber or even Christian women captured by the Berber pirates. Today the Kologlis are numerous in Misurata, Zliten, Tripoli and Zavia. In spite of their comparatively small number, the Kologlis were of great importance during the Turkish rule as they provided nearly all the government employees and generally speaking they enjoyed a higher standard of living than the rest of the people. In the western coastal region they are concentrated in the town of Zavia, while their number in the rest of the region is very small indeed.

(6) Italians

The Turkish rule which lasted nearly 4 centuries came to its end by the year 1911 when Italy occupied the country. Italian interest in Tripolitania dates back tothe early 1880s when the French occupied Tunisia and the British took over Egypt. By the 4th of November 1911 a Royal decree was issued in

which Italy proclaimed absolute sovereignty over the whole of Libya. However the people in both Cyrenaica and Tripolitania were not fully subjugated until 1934. The Italian occupation which lasted thirty-three years did not bring any sort of changes in the racial composition. By the decree of 31st of October 1919 "Legge Fondamentale per la Cerenaica" which also extended to Tripolitania it was intended to treat the native population on an equal footing with the Italian settlers. However the policy of equal partnership and democratic rule was reversed by the rise of Fascism, and the decree of June the 26th 1927 cancelled the earlier decrees and made the natives second-class citizens. The efforts made by the Italian government for their mass colonization schemes resulted in the presence of the several thousands of Italian farmers found in the western coastal zone today.

Another important fact about the Italian rule was that during the conflicts between them and the local population in the first two decades of their occupation, thousands of native people were killed and others were exiled or migrated to the neighbouring countries, Tunisia and Egypt for instance where they form Libyan minorities in the cities of Tunis and Alexandria.

(7) Beside the former ethnical elements, represented by the Arabs, the Kologlis and of course the racial background formed by the Berbers, other minor elements are to be found. Prior to the Arab conquest Jews[11] occurred all over north Africa including the Tripolitanian coast. Some of them came from Cyrenaica together with the Berbers who adopted the Jewish faith. However their total was declining until 1391 A.D., owing to the gradual Berber conversion to Islam. But since this date, when Granada was captured by the

Christians which resulted in the expulsion of both Moslems and Jews from Spain, the number of Jews has increased. Moreover they have avoided mixing with other races in spite of the fact they speak the Arabic language.

Secondly there is the Negroid element which mainly consists of descendants of the Sudanese slaves brought to the country by the trans-Saharan commerce. Their number is small compared with other elements and they have mixed well with the other people. They also speak Arabic and Islam is their religion. The word 'Abd' - slave is still very common to indicate these people and because of their colour they are considered as an inferior race.

From 1943 until 1950 Tripolitania was occupied by the British Military Administration. On December 24th 1951 Libya including the provinces of Tripolitania, Cyrenaica and Fezzan was declared an independent United Kingdom with federal constitution. Racially speaking, no important changes have occurred during these periods apart from the Italian repatriation and the Jewish migration to Israel after the crises of Palestine 1948.

B. ETHNIC DISTRIBUTION

In the western coastal belt the ethnic distribution of population takes the following line, according to the only available figures, which were given by Agostini in 1917:

Locality	Arab	Berber	Arab-Berber	Kologlis	Jews	Negros
Zavia & Sorman	19.179	984	3.594	4.028	517	?
Zanzur	345	3.628	6.280	140	80	?
Agelat	2.271	nil	12.760	nil	nil	?
Zuara	4.922	4.566	2.653	nil	nil	?
Total	26.717	9.179	25.287	4.168	597	?

These figures indicate that the Arabs concentrate in Zavia and Sorman

while the Berbers are localised in Zuara, which is the only place along the whole Tripolitanian coast to maintain its Berber characteristics. The real reason is not definite but it may be that Zuara, being surrounded with great areas of sebkas, did not attract the Arab Tribes to stay and reside in an area, which is not of any economic importance. This situation left the Berbers out of contact with the Arabs and so they retained their Berber characteristics in spite of their conversion to Islam.

(1) Berber

Apart from the Berber of Zuara who are still proud of their race and also speak Berber, the rest of the people in our region called Berbers by Agostini really consider themselves Arabs. They speak Arabic and follow the Malikia heresy while the Berbers all over Tripolitania follow the Kharjets-Abadite heresy. They certainly fail to qualify as Berbers according to the definition which states that they should speak the Mazih language and follow the Kharjets-Abadite heresy. Therefore the reasons which made Agostini classify them as Berbers are doubtful unless he took their physical features in consideration. But such a judgment can be quite dangerous as there are no real physical differences between Arab and Berber. Therefore it would be more convenient to include these so-called Berbers in the Arab-Berber category. The fact that the Berbers in Tripolitania in spite of their conversion to Islam follow the Abadite heresy while the rest of people follow the Malikia heresy is something worthy of consideration. The reasons which may explain this phenomenon may be attributed to the following facts:

(1) Although the Berbers have been completely converted to Islam, the Arabs considered themselves a higher race and of superior status.

(2) The Abadites consider themselves the free Moslems and that is why they are against many beliefs and customs followed by other Moslems.

(3) The Abadites believed that the Caliph should not be restricted to one family. He must be the right man without any regard to his race and nationality.

(4) The Arabs tried to revive the habit of harem because of the beauty of Berber women, but this did not meet with the approval of the Berbers.

The severe attacks against the Kharjets in Syria caused their wide dispersal. Their first coming to Tripolitania is not quite determined yet, but probably they arrived in the first half of the eighth century about 730-750 A.D.(12) The Berbers found in the Abadite principles some sort of relief as it gave them the same rights and obligations as the Arabs. However in a very short time they gained a great influence as by the year 757 A.D. one of their leaders Abd el-Hattab el-Iamani became the governor of Tripolitania.

(2) Arabs

Among the Arab tribes are found what are called the Sherif tribes who claim descent from the Prophet. It is believed that they are the descendants of the three Sherif brothers, Idris, Sulaiman and Mohamed, descendants from Ali ibn abi Taleb and his wife Fatma. The action by the Abbasid Caliph against Alis followers made them migrate to southern Arabia and el-Magreb. In the year 789 A.D.(13) Idris was able with the Berbers assistance to form the Idris state in Morocco. Soon afterwards his brother Sulaiman followed him while their third brother was murdered by the Caliph el-Mausur. It is likely that all the Sherif tribes of Tripolitania follow the principles of Idris. One of their important claims or principles was that the Caliphate which was held by the

Abbasid Caliph must go immediately to the descendants of Ali because they are the Caliphate legal heirs. These tribes are represented in our region by Ulad Jiarbua and its branches el-Abshat, el-Gamarda and Ulad Bin Mariam in Zavia, Ulad Abi Isa in Sorman and el-Hmedat in Zuara.

Also found in Tripolitania are "Maraboutic tribes who claim descent from a Saint, usually buried in their territories and generally reputed to have come from el-Saghia el-Hamra in southern Morocco, where from the end of the 14th century the holiest pilgrims seem to have been born. The Marabouts seem to have exercised considerable political power since they served as rallying points for different tribes during the Middle Ages. These tribes called themselves after their patron Saints to whom they refer as their ancestors".(14)

The Maraboutic tribes, whose title besides being a mark of respect also confers certain privileges, are of diverse origin; some belong to the Arabic element Ulad Isa and Ulad Bu Hmeira, some are of Berber origin as Ulad Amara, while some others belong to the Arab-Berber element Ashab Ulad bin Mariam. All these tribes are of Zavia.

The distinction between the Sherif and Maraboutic tribes is not very well known to Libyans as both groups of tribes consider themselves as Marabouts, which has a stronger religious meaning.

(3) Arab-Berbers

The Arab-Berber element is undoubtedly the most dominant racial group in the western coastal region. They concentrate at Zanzur, Sorman, Agelat and in the Mudiriah of Regdalin. Elsewhere they are far less numerous.

Historically speaking, this element, was insignificant before the invasion of both Beni Hilal and Beni Suleim in the 11th century, because only

small numbers of Arabs stayed permanently in the country. Moreover the social background of those Arabs was different from that of the Berber majority, and so racial miscegenation rarely occurred. Such conditions remained unchanged until the arrival of the two former tribes despite the complete Berber conversion to Islam.

The coming of these tribes unleashed a great deal of unrest and conflict with the Berber tribes who, in course of time, became fully subdued. The defeat of the Berbers made them accept Arab superiority and intermarriage became common, although no great change in ethnic composition took place until perhaps two centuries later. From then onwards the two facts of the Arab accepted superiority and the comparatively peaceful conditions caused the relations between the two races to crystallize and take friendly shape. The result was that most of the Berber tribes apart from Zuara became not only Arabized from both religious and linguistic points of view but also from a racial point of view.

Generally speaking, apart from the Berbers of Zuara the present tribes of our region declare that they are Arabs because of their Arabic language and their Malikia heresy. However this assertion does not change the fact that the racial foundation of most tribes is a mixture of Arab and Berber. Moreover in future this element will certainly dominate the others if the economic situation becomes more stable and if education continues to spread.

(4) Jews

The number of Jews in our region was 517 by the year 1917. Later on this number increased rapidly to a total of 1458 by 1940. The Jews all over Libya were involved in practising commerce and artisan crafts. The 1948 crises of

Palestine, the partition of the country and the outbreak of the war between the Arabs and Jews caused the people of Tripolitania to attack the Jews. A great number of them were killed and those who left migrated from the countryside to the city of Tripoli and to Israel itself. By the year 1952 all the Jews of our region, who were concentrated in Zavia and Zanzur, had left and none have yet returned.

(5) Negroes

The following statistics show the distribution of the Negro element in the western coastal zone. Figures were obtained during a field work study in 1957:

Locality	Number
Zanzur	380
Zavia	800
Sorman	500
Sabratha	450
Agelat	420
Zuara	520
Total:	3,070

Inbreeding is common among the negroes as inter-marriage with the white people is not welcomed. Some of the negro people, especially in the small centres and rural areas, are still very loyal to their masters. The habit of keeping negro slave women in the past few centuries, at least by rich people, has produced a half-caste element; in Agelat and Sorman for example such half breed people can be traced because of their negro characteristics, though they consider themselves as white and hate to be reminded of their mixed blood.

(6) Italians

The distribution of Italians in our region in the year 1958 was as follows:

Locality	Number of Italians
Zavia	371
Zanzur	130
Oliveti	873
Sorman	38
Total:	1,412

The majority of this number are farmers especially in the case of Oliveti, the Italian demographic settlement; in the other districts they are mainly farmers on private concessions, but about 10% are technicians, merchants and government employees mainly in Zavia town. Generally speaking, the living standard of the Italians is much better than that of the indigenous population.

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PART II

CHAPTER II

ADMINISTRATIVE AND TRIBAL STRUCTURE

INTRODUCTION

The Wilayet of Tripolitania has three provinces (Tripoli - Western, Eastern and Central), each subdivided into districts which are still administratively based on the Turkish system. The western province is made up of Zavia and Zuara districts each headed by a Commissioner (Mutasarrif) stationed in both Zavia and Zuara. These two districts are also subdivided into Mudiriat[1] (sing. Mudiriah) each controlled by an administrative Mudir who in a few cases is directly controlled by the Mutasarrif's assistant known as the Kaimmakam. However the post of Kaimmakam is obsolescent as the present system considers the Mudir directly responsible in front of the Mutasarrif for a certain number of tribes (Cabail). The Sheikh is the head of a tribe, not a paid government official, and has a great deal of authority over the Cabila. Sometimes however the term Sheikh can be a courtesy title. The Sheikh's assistant is the Imam whose responsibility concerns the religious affairs including marriage and divorce cases. Within the Cabila there are Lahmat (sing. Lahma) or family groups. The general purpose of these family groups is to provide an assembly of elders whom the Sheikh may consult informally on questions concerning the tribal welfare.

The Mudiriat of the western province are made up as follows:-

	District	Mudiriah
A.	Zavia	1. Zanzur
		2. Bianchi el-Zahra
		3. el-Mamura
		4. Zavia
		5. Sorman
		6. Sabratha
		7. Agelat
		8. Bir el-Ghanam

District		Mudiriah
B.	Zuara	9. Zuara
		10. Regdalin
		11. el-Asca

The Mudiriat of Bianchi and Bir el-Ghanam have to be excluded from our study, first because they lie outside the limits of our western coastal region, and secondly because of the small proportion of population they support; Bianchi (7,477) and Bir el-Ghanam (1,279) have a total of 8,756, or 6% of the whole population of the province. (see fig. 8)

The following statistics indicate the number of tribes, families and total population as given in the Preliminary Results of the Population Census of the United Kingdom of Libya for the year 1954 for both Zavia and Zuara districts(2)

Mudiriah	Number of Cabail	Number of families	Total Population
Zanzur & Mamura	33	5,959	24,885
Zavia	36	7,973	35,043
Sorman	19	3,813	16,208
Sabratha	12	3,206	14,629
Agelat	9	3,591	15,593
Zuara	13	1,434	6,773
Regdalin	12	2,662	13,621
el-Assa	10	1,998	10,806
Total:	144	30,436	137,558

The above figures give an average of 955 persons per Cabila and an average of 4.5 persons per family. Comparing these Cabail figures with those given by Agostini 1917 we find that the number has grown considerably. The reasons for this phenomenon may be attributed to many facts among which the quarrels among the lahmat for the position of Sheikh or for land properties and feud affairs are particularly noteworthy.

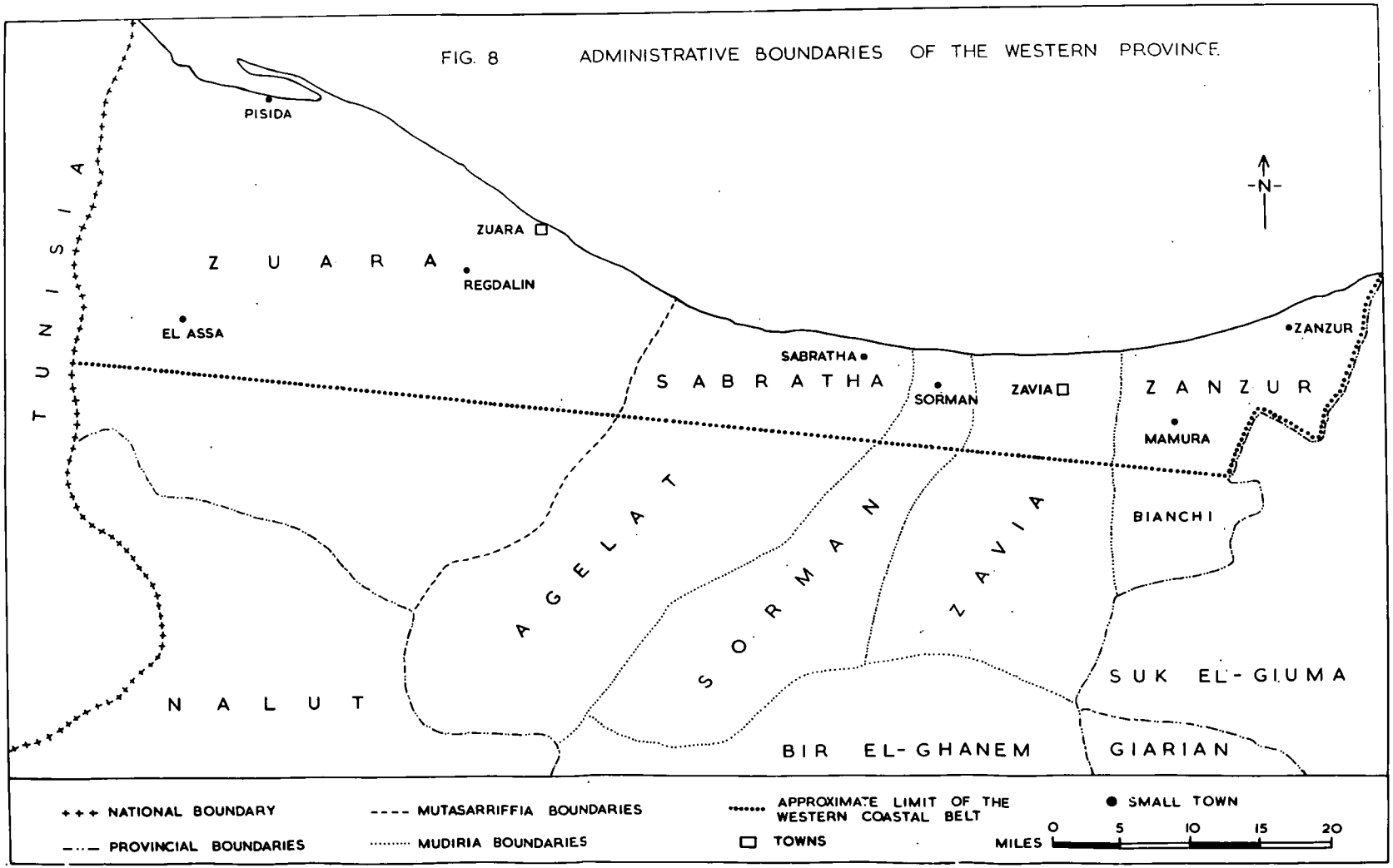


FIG. 8 ADMINISTRATIVE BOUNDARIES OF THE WESTERN PROVINCE
PISIDA
ZUARA
Z U A R A
REGDALIN
EL ASSA
T U N I S I A
SABRATHA
S A B R A T H A
SORMAN
ZAVIA
Z A N Z U R
ZANZUR
MAMURA
BIANCHI
A G E L A T
S O R M A N
Z A V I A
N A L U T
SUK EL-GIUMA
BIR EL-GHANEM
GIARIAN
N
+++ NATIONAL BOUNDARY
---- MUTASARRIFFIA BOUNDARIES
APPROXIMATE LIMIT OF THE WESTERN COASTAL BELT
SMALL TOWN
PROVINCIAL BOUNDARIES
MUDIRIA BOUNDARIES
TOWNS
MILES 0 5 10 15 20

Mudiriah	Number of Tribes	
	1957	1917
Zanzur	33	31
Zavia	36	34
Sorman	19	14
Sabratha	12	8
Agelat	9	8
Zuara	13	10
Regdalin	12	5
el-Assa	10	8
Total:	144	118

We have already mentioned that the people of our western coastal region may be racially divided into the five categories of Arab, Berber, Arab-Berber, Kologlis and Jews, and the total number and distribution of each group were given in the previous chapter. Beside these racial divisions which are of no great importance from the political and social points of view except perhaps in Zuara district where the feeling of hatred between the Berbers and the Arabs is very strong. The people of this belt are in fact divided into the following social divisions which are of political significance.

Locality	Divisions
Zanzur	1. Zanzur
	2. The minor oases west of Zanzur
	3. Ursheffana
Zavia	1. el-Blaaza
	2. el-Marabtia-Marabouts
	3. Kologlia-Kologlis
	4. el-Raiah-Cabail
Sorman	1. el-Giuari
	2. el-Marabtia
Sabratha	1. el-Alalga in Sabratha
	2. el-Agelat in Agelat
Zuara	1. el-Zuarini - Berbers
	2. el-Nuail - Arabs.

The political struggle among these divisions has reached its climax in the last ten years because of the general parliamentary elections first held in 1951 which resulted in hatred and enmity but never in bloodshed except in Zuara district in the year 1958 when the Berbers refused to accept the elected mayor just because he was an Arab. On the other hand such a struggle in the Mudiriah of Zanzur is not as noticeable as elsewhere in the province.

We shall now examine in detail the tribal structure of the political divisions, but it should be noted that the final results of the 1954 Census have not been published yet, therefore the tribal figures given below are a result of a fieldwork study carried out in 1958. According to 1957 figures, which are going to be the basis of our studies, the population of the province was made up as the following statistics indicate:

Mudiriah	Population		Total	Percentage of Total Pop. of Province.
	Natives	Italians		
Zanzur & Mamura	19,415	120	19,535	14.7
Zavia	33,790	1,572	35,362	26.7
Sorman	17,760	38	17,798	13.5
Sabratha	15,728	30	15,758	11.4
Agelat	16,593	-	16,593	11.7
Zuara	10,068	64	10,132	7.6
Regdalin	9,253	-	9,253	7.2
el-Assa	9,042	-	9,042	7.2
Total:	131,649	1,824	133,473	100

Tribal Structure:

A. Zanzur

The people of Zanzur are subdivided into three groups: (1) the people who live in the oasis of Zanzur itself; (2) the inhabitants of the minor oases which include el-Maia, Saiad, el-Mamura, el-Hascian and el-Tuebia; (3) the part of

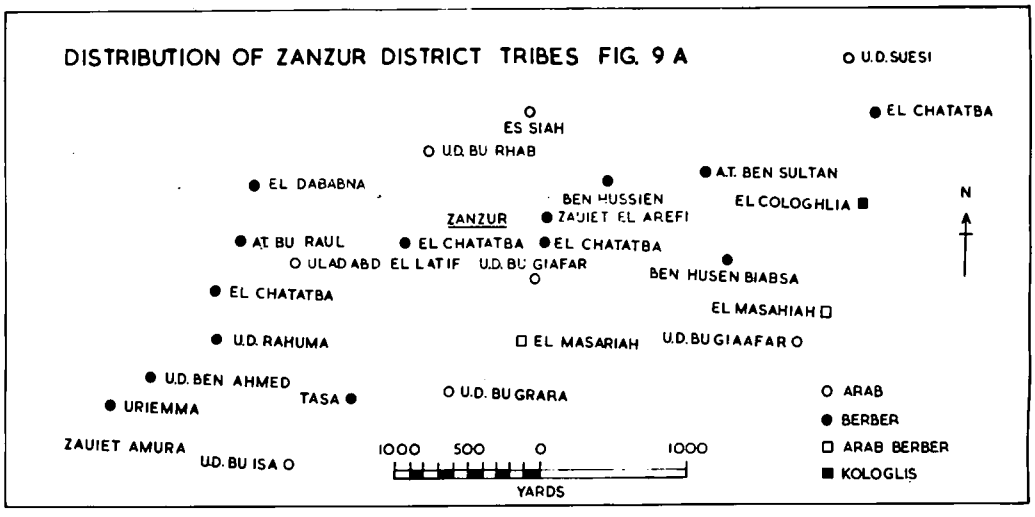
Ursheffana who now belong administratively to this Mudiriah. During Turkish times and early years of the Italian occupation, all Ursheffana people were under what was so-called Caza el-Azizia.

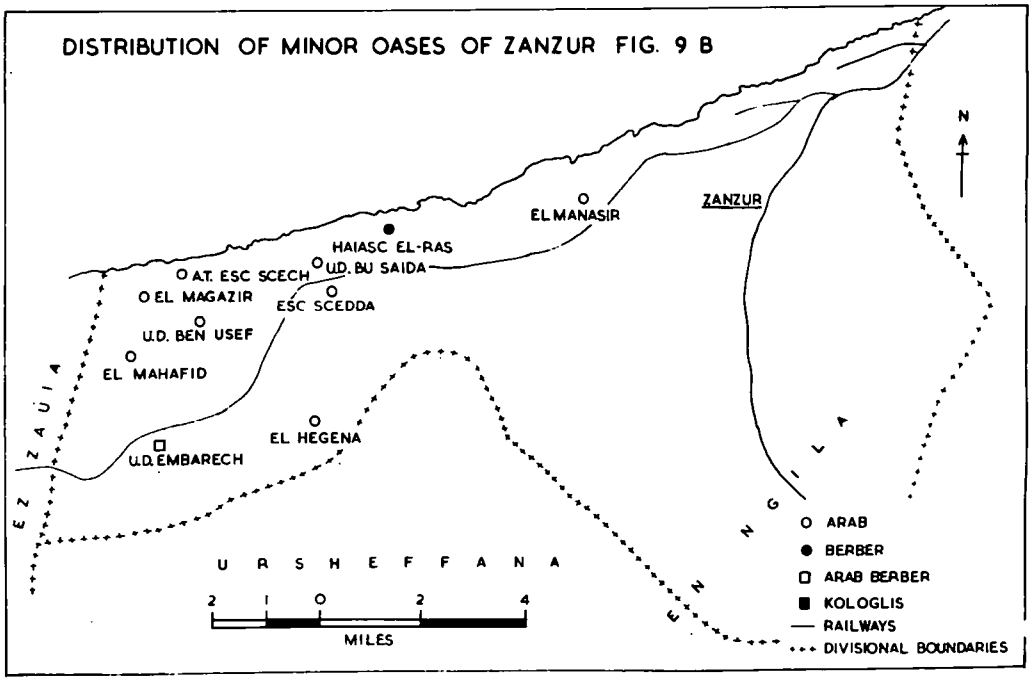
No changes have occurred recently in the total number of the Cabail in Zanzur itself as their number is still equal to that given by Agostini But in the case of the tribes of the minor oases a few changes have been recorded; firstly the Cabila of el-Saada which was mentioned by Agostini(3) has disappeared since 1921, and secondly two new tribes are to be found, Zawiat Amura and el-Giada. Some inquiries have been made in the area and people consulted confirmed that these two tribes were in existence at the time of Agostini's work. Also in 1954 a new cabila was founded in Mamura village for cultivators chosen from the whole province for the village settlement scheme. The number of Ursheffana tribes belonging to Zanzur is 6, which gives a total of 33 tribes in the whole Mudiriah divided as follows: 16 in Zanzur, 11 in the Minor oases and 6 in Ursheffana.

The tribal structure(4) of the former groups is tabulated below: (see fig. 9)

1. Zanzur

Number of Cabila	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
1	Ulad Bu Giafar	Ulad Salem el-Khabaizia	345	612	Marabouts of Arabic origin
2	Wiriemma	el-Twaba el-Karawta el-Hwanish	390	594	Arab-Berber
3	Ulad Abi-Gharara	Ulad Ali " Umar	235	399	Marabouts of Arab-Berber origin


DISTRIBUTION OF ZANZUR DISTRICT TRIBES FIG. 9 A
O U.D.SUESI
ES SIAH
EL CHATATBA
O U.D. BU RHAB
A.T. BEN SULTAN
EL DABABNA
BEN HUSSIEN
EL COLOGHLIA
ZANZUR
ZAUIET EL AREFI
N
A.T. BU RAUL
EL CHATATBA
EL CHATATBA
O ULAD ABD EL LATIF
U.D. BU GIAFAR
BEN HUSEN BIABSA
EL CHATATBA
EL MASAHIAH
U.D. RAHUMA
EL MASARIAH
U.D. BU GIAAFAR O
U.D. BEN AHMED
TASA
O U.D. BU GRARA
URIEMMA
O ARAB
BERBER
ARAB BERBER
KOLOGLIS
ZAUIET AMURA
U.D. BU ISA O
1000 500 O 1000
YARDS


DISTRIBUTION OF MINOR OASES OF ZANZUR FIG. 9 B
N
EL MANASIR
ZANZUR
HAIASC EL-RAS
O A.T. ESC SCECH
U.D. BU SAIDA
O EL MAGAZIR
ESC SCEDDA
U.D. BEN USEF
EL MAHAFID
EL HEGENA
U.D. EMBARECH
EZ ZAUIA
U R S H E F F A N A
2 1 O 2 4
MILES
E N G I L A
O ARAB
BERBER
ARAB BERBER
KOLOGLIS
RAILWAYS
DIVISIONAL BOUNDARIES

Number of Cabila	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
4	Ulad Suesi	el-Aaida el-Ghanaidia	225	476	Marabouts of Arab-Berber origin.
5	Ulad Ahmed	Ulad Rahuma " Musa " Isa	375	457	Arab-Berber
6	el-Khatatba	el-Khatatba Ulad Abd el-Hagh	335	552	Arab-Berber
7	el-Baida	el-Basaisia el-Baida	340	579	Arab-Berber
8	el-Kologlia	el-Masharga Ulad Sueid	140	322	
9	el-Siah	Ulad el-Flit " Usef	210	395	Marabouts of Arab-Berber origin
10	Zaviat el-Arifi	Ulad el-Sheikh " el-Imam	120	370	Arab-Berber
11	el-Masarih	el-Giahabna el-Giaraba	360	720	Arab-Berber
12	el-Brahmia	el-Regebat Ulad Milad	310	594	Arab-Berber
13	el-Debadba	Ulad Fuiza el-Brabshia	390	523	Arab-Berber
14	Ulad Abd el-Attif	Ulad Abd el Attif " Abi Rihab	330	502	Marabouts of Arab-Berber origin
15	Tasa	el-Mazail Ulad Khalid	200	277	Arab-Berber
16	el-Guaid	Ulad Sultan " Gharsa	200	517	Arab-Berber

2. The Minor Oases:

Number of Cabila	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
17	el-Mashashta	Ulad Ahmed " Abd el-Mumin	280	534	Marabouts of Arab-Berber origin
18	Zawiat Amura	el-Amiar el-Flegat	-	452	Arab-Berber, stable between Zanzur & Saiad
19	Accara	Ulad Zedan " el-Lafi	320	870	Arab-Berber, stable in Saiad
20	Hiash el-Ras	Ulad Husein " Abdalla	140	269	Arab-Berber, stable in el-Maia.
21	Ulad Abi Said	el-Khawalig	250	528	Marabouts of Arab-Berber origin, stable in el-Maia
22	el-Ghudda	Ulad Hameda " Husein	250	523	Marabouts of Arab-Berber origin, stable in el-Maia
23	el-Mahafid	el-Khalailia el-Masahlia	400	453	Marabouts of Arab-Berber origin, stable in el-Maia
24	Ulad Usef	Ulad Usef " Abdul Rahman	170	179	Marabouts of Arab-Berber origin, stable in Hascian
25	el-Zuaba	el-Zuaba el-Ruashdia	410	454	Arab-Berber, stable in el-Tuebia
26	el-Giada	Ulad Ahmed " Umar	-	425	Arab-Berber
27	el-Mamura	-	-	717	Mixed groups, stable in el-Mamura.

3. Ursheffana[5]

Number of Cabila	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
28	el-Agub	Ulad Bu Bakar " Mohamed	520	809	Arab-Berber
29	Ulad el-Giahilia	el-Khalaifia el-Bakakra	560	592	Arab-Berber stable in Hascian
30	Ulad Mubarak	Ulad Mohamed " Salem	1,150	2,932	Arab-Berber stable in el-Mamura
31	Ulad Tellis	el-Haballa el-Ababda	750	339	Arab-Berber stable in el Hascian
32	el Manasir	el-Hdedat el-Kuawsa	640	1,053	Marabouts of Arab-Berber origin, stable in Saiad
33	Ulad Bu Delal	Ulad Bu Delal	140	417	Arab-Berber

The growth of the Mudiriah's population from 1917 to 1957 is shown below:-

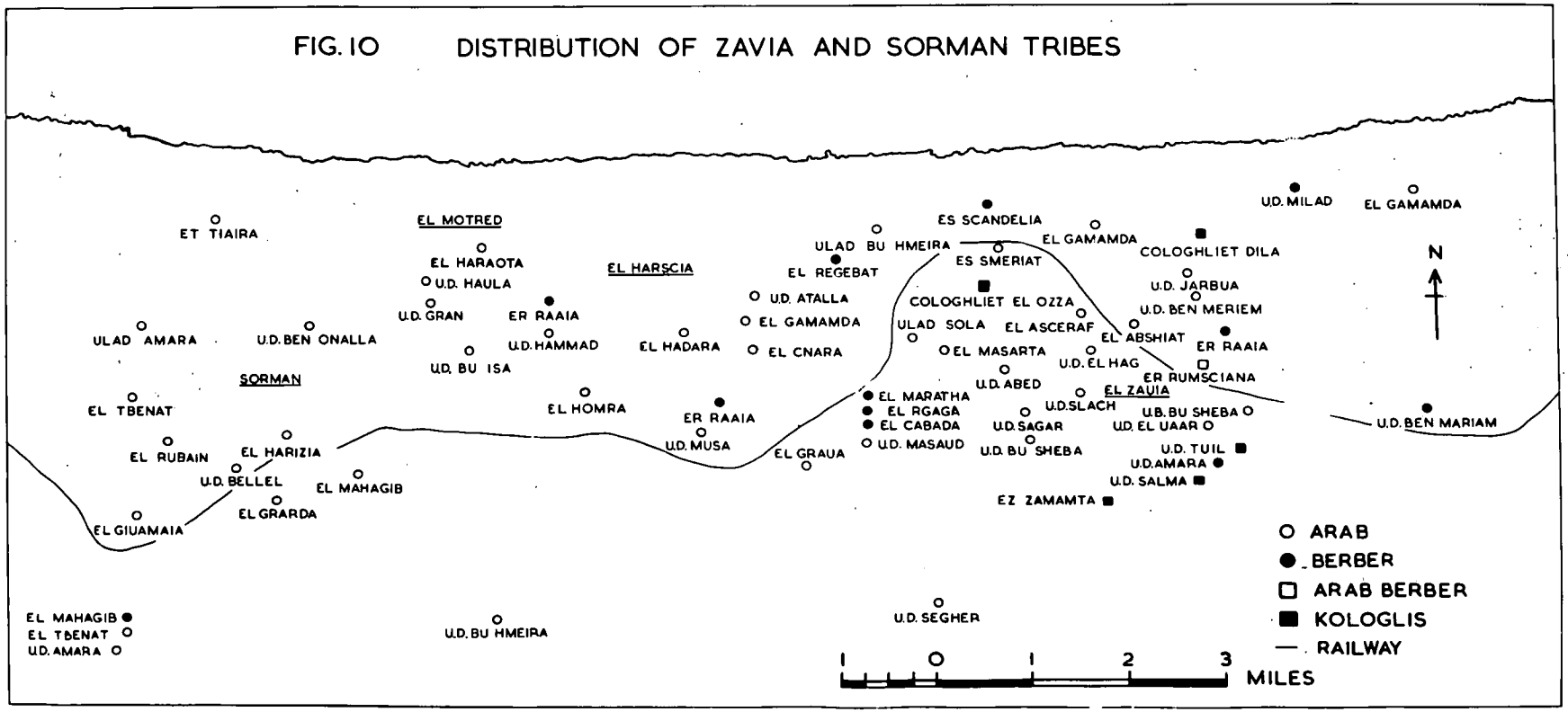
Locality	1917	1957	% of total population 1957
Zanzur	4,555	7,889	40.3
The Minor oases	2,675	5,404	27.6
Ursheffana	3,760	6,122	30.9
Italians	-	129	1.2
	10,990	19,544	100%

B. Zavia

The Mudiriah of Zavia is composed of 36 tribes divided as follows:

(1) 12 Marabouts: (2) 13 Blaaza: (3) 8 Kologlis: (4) 3 Raiah:(see fig. 10).

FIG. 10 DISTRIBUTION OF ZAVIA AND SORMAN TRIBES



1. The 12 Marabout tribes (6) which include both the Sheriff and Marabout tribes, form the biggest group in number. Their total was 7,183 in 1917 and it has increased to 12,913 in 1957 or about 38.2% of the Mudiriah's native population. The structure of the Marabout tribes is as given below:-

	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
1	Ulad Giarbua	el-Kremat el-Khadarwa Ulad Zavia	1238	1927	Arabs of Bėni Suleim The Cabila ancestor was Sidi Kasem Abdul Hamid buried in the territory
2	el-Gamamda	el-Hfedat el-Kharabshe Ulad Ahmed	1560	2453	Also from Bėni Suleim Known after Sidi Ahmed el-Gamudi who died in 1576. Part of the tribė is found in Judaim
3	el-Abshat	Ulad Iz el-Din " Ahmed " Husein	508	889	From Beni Suleim, known after Sidi Abdul Rahman el-Besht who died in 1494.
4	Uld Bin Mariam	el-Ganatra Gasar Bin Mariam	217	278	Arabs from Beni Sulein. The cabila ancestor was Sidi Ahmed Bader Smah who died in 1571
5	Ashab Ulad Bin Mariam	el-Dakhakhna el-Khalaifia	630	1969	Arab-Berber Servants of Ulad Bin Mariam
6	Ulad Bu Hmeira	el-Horsh el-Hanagra el-Amarin	1561	2347	Sheriff of Beni Hilal Known after Sidi Ibrahim Bu Hmeira who died in 1590. Part of the Cabila is found in el-Harsha

	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
7	el-Ramha	el-Shkailia el-Raibia	245	389	Sheriff Known after Sidi el-Ramah
8	Ulad Slag	el-Sued el-Ghazaimia	303	447	Sheriff. Known after Sidi Slag.
9	Ulad Amara	Ulad Ahmed " Milad	242	315	Arab-Berber, known after Sidi-Amara.
10	el-Grawa	Ulad Ahmed el-Mashara	244	367	Known after Sidi Adul Rahman el-Greu who died in 1591. Arabs from Beni Suleim.
11	el-Ashraf	Ulad Husein " el-Bashkar " Hmeda	435	798	Sheriff, Known After Sidi Mohamed el Sheriff
12	Bu Hmeira Harscia			737	Developed as a Cabila from Ulad Bu Hmeira about 1922

2. el-Blaaza division(7) is the second in number after the Marabouts. Their total number increased from 6,633 in 1917 to 11,204 in 1957 or about 33.1% of the Mudiriah's native population. Agostini believed that they are of Arabic origin from Beni Suleim.

The Blaaza tribal structure is as shown below:-

13	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
13	Ulad Sagar	Ulad Suleman el-Mahata el-Gdarat	1191	2227	Stable in Zavia

	Name of Cabila	Lhmat	Population 1917	Population 1957	Notes
14	Knara	el-Adiab el-Zuakir el-Ahsan	727	1207	Stable in el-Harscia
15	Ulad Sola	el-Aghwal el-Shaabna	584	931	Mostly found in Zavia with a minority in el-Harscia
16	Ulad Hawia	el-Traca el-Frarha	470	870	Stable in el-Matred
17	el Hracta	el-Sud el-Hamamda	502	866	Also in el-Matred
18	Ulad Bu Sheba	el-Araibia el-Aknaz	473	802	Mostly in Zavia
19	Ulad Masued	el-Buwakir el-Baadsha	563	801	Mostly stable in Zavia
20	Ulad Salama	el-Amarin el-Trarfa	563	784	Mostly in el-Harscia
21	Ulad Atalla	el-Awan el-Ghanainia	338	604	Stable in Harscia
22	Ulad el-Waer	el-Hwaisia el-Khadarwa	370	685	Stable in Zavia
23	Ulad el-Hag	el-Shalaibia el-Makhalif	364	660	Stable in Zavia
24	el-Hadara	Ulad el-Koni el-Baharin	232	425	Mostly in el-Harscia
25	Ulad Abed	el-Nasairia el-Magarba	257	361	Stable in Zavia

3. The Kológlis[8] This division is composed of eight tribes, seven of which are considered as real or pure Kologlis while the 8th is basically made up of Arabic elements. But as this Cabila was since the Turkish rule on the Kologlis'

political side it is now well considered as one of their tribes. By 1917 the total number of the Kologlis tribes was 4,028 and it has increased to a total of 8,438 in 1957 or about 24.9%.of the Mudiriah's Native population. The Kologlis tribal structure is made up as follows:-

	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
26	Ulad Tawil	Ulad Lagha el-Msarta el-Dabadba	1116	1961	Stable in Zavia
27	Ulad Salma	Ulad Husein " Ali " Umar	808	1213	Stable in Zavia
28	el-Zmamta	Ulad Lagha " Husein	589	1010	Stable in Zavia
29	Wast el-Dheik	Ulad Khalil " Nabi	545	824	Stable in Zavia
30	Wast Ali	el-Lagama Ulad Agina	404	507	The original name was Wast Bin el-Hag
31	Uzza	Ulad el-Hag " Mustafa	341	302	Stable in Zavia
32	Dila	el-Bshana el-Buakir	225	342	Stable in Zavia
33	Ulad Musa	el-Sud el-Shuffuf	943	1979	Stable in el-Sabria

4. el-Raiah(9) The word Raiah means the servants and it was given by the Arabs who subdued these tribes andmade servants of them. Agostini believes that they are the descendants from the ancient Berbers who lived in the area and that is why he considers them as the real people of Zavia. The Raiah division is very small compared with the former groups andit is now composed of three tibes, namely Raiah, Bakush, Raiah Judaim and Raiah Sabria. These three tribes were

mentioned by Agostini in only one tribe under the name of el-Gabail in spite of the fact that they were distinct tribes, as they are now, long before 1917. The population of these tribes increased from 984 in 1917 to 1,528 in 1957 or about 3.8% of the Mudiriah's Native population.

	Name of Cabila	Lahmat	Population 1917	Population 1957	Notes
34	Raiah Bakush	el-Rgebat el-Shcundalia	-	425	Mostly in Zavia
35	Raiah Judaim	Ulad Abdul-Rahman Ulad Milad	-	480	Mostly in Judaim
36	Raiah Sabria	el-Shwakin	-	618	Mostly in el-Sabria

In 1917 Agostini gave a total of 34 tribes in the Mudiriah one of which was named el-Taish(10). However this Cabila did not exist at that time as it ceased to function about 1900. The only new tribe to found after 1917 is Ulad Bu Hmeina Harscia as has been mentioned and of course the dividing of the Raiah division into three separate tribes which gives the present number of 36 tribes.

C. Sorman

The Mudiriah of Sorman is composed of 19 tribes divided as follows: (1) 10 Giuari (2) 8 Marabouts and (3) the last tribe is a collection of outside people who now live permanently in the Territory. It is called el-Markez and dates back to 1947. (see fig. 10)

(1) The Giuari are of Arabic origin from Beni Suleim or exactly from the Beni Wishah tribe whose descendants are still to be found in Zavia and Garian. The Giuari were very strong and played an important part in the war against the Italian invaders. The total number of this division was 4,032 in 1917 and by

1957 the figure increased to 8,207 or about 46.2% of the Mudiriah's Native population. Also the number of tribes has increased from 8 to 10 in the same period. The two new tribes are el-Mahamid and Ulad el-Khadem, but they were in existence in 1936 as they have been mentioned in the Census of that year. A few reliable people have been consulted and all agreed that the two mentioned tribes were in existence before the Italian occupation. The tribal structure of this division is made up as follows:-.

1. el-Giuari(11)

	Cabila	Lahmat	Population 1917	Population 1957	Notes
37	Ulad Amara	el-Kiakh el-Awasheg el-Nuasir	747	1413	Stable in Sorman
38	Ulad Hammad	el-Maatig el-Kuffesh Ulad Tawil	672	1064	Mostly in Bu-Isa.
39	el-Giuari	el-Huggag el-Kharabshe el-Ghamaimia	777	1047	Stable in Sorman
40	Ulad Abi el-Lail	Ulad Masud " Malik el-Masarta	555	894	Mostly in Sorman
41	el-Mahamid	Ulad Sultan " Uon	-	796	Mostly in Sorman
42	el-Rabaiya	Ulad Ali Ras " Husein	350	712	Mostly in Sorman
43	el-Tbenat	Ulad Amer " Ahmed	350	623	Mostly in Sorman
44	Ulad el-Khadem	el-Manafid el-Khadaimia	-	577	Mostly in Sorman
45	el-Haraizia	Ulad Rahuma el Fradis	279	558	Stable in Sorman
46	el-Humra	Ulad Gan el-Humra	403	528	Stable in el-Sabria

2. el-Mrabtia[12] The Marabouts of Sorman as elsewhere in the country are of different racial stocks; some are Arabs while the majority are Arab-Berber.

The present number of the Marabout tribes is higher by two tribes than that given by Agostini 1917. One of these new tribes has been developed from a lahma in el-Grarda tribe into a Cabila known as el-Guaiat, while the other missing tribe, el Ashab, was also mentioned in the 1936 census and along with the same sort of information as consulted in the case of Giuari tribes the existence of this Cabila before 1911 seems certain.

The population of this division has increased from 3,624 in 1917 to 9,159 in 1957. Together with the el-Markez tribe they form 53.8% of the Mudiriah's native population. The tribal structure of the eight Marabout tribes is as indicated below:-

	Cabila	Lahmat	Population 1917	Population 1957	Notes
47	el-Mahagib	Ulad Zaki " Abed " Rashed	888	1870	Arab-Berber known after Sidi Iahia el-Mahgub
48	Ukba	Ulad Ibrahim el-Trarma	619	1372	Arabs, Stable in Sorman.
49	el-Grarda	Ulad Salem " Ahmed el-Dgegat	594	1137	Arab-Berber Mostly in Sorman
50	Ulad Abi Isa	Ulad Iahia " Husein " Umar	641	1085	Arabs. Mostly in Bu Isu oasis.
51	Magura	el-Khalailia el-Manasir	526	1007	Arab-Berber Mostly in Sorman
52	el-Ashab	Ulad Nueir el-Tgagza	-	1197	Arab-Berber.

	Cabila	Lahmat	Population 1917	Population 1957	Notes
53	el-Guaiat	el-Draba el-Ataia	-	908	Arab-Berber, Developed into a Cabila from el-Grarda
54	el-Taaira	el-Shuhub el-Amamra	357	493	Arab-Berber
55	el-Markez	-	-	394	Founded in 1947 for provisional purposes and it is composed from different families

D. Sabratha

The people of Sabratha are known as el-Alalga after one of the Beni Suleim tribes known as Beni Auf Allag. The Alalga until now are still very proud of their race and until a few years ago intermarriages with their neighbours, the Agelat people, were strongly opposed.

By 1917, as Agostini's figures indicate, the total number of Alalga was 6,300 divided into eight tribes. However the Cabail of 1957 have grown considerably both in number and in total population. In 1957 the Alalga people reached a total of 15,728 divided into 12 tribes. The four new tribes are: (1) el-Ftahlia which developed as a Cabila from el-Gharablia in about 1928: (2) Ulad Iahia also developed as a separate Cabila from Ulad Isa in about 1920: (3) Khurasan which developed as a Cabila from el-Madahin in the early 1930: (4) el-Barania which is a completely new tribe and has been founded in 1947 for provisional purposes for the strangers who live permanently in the area. The Alalga tribal structure is made up as follows.[13] (see fig. 11)

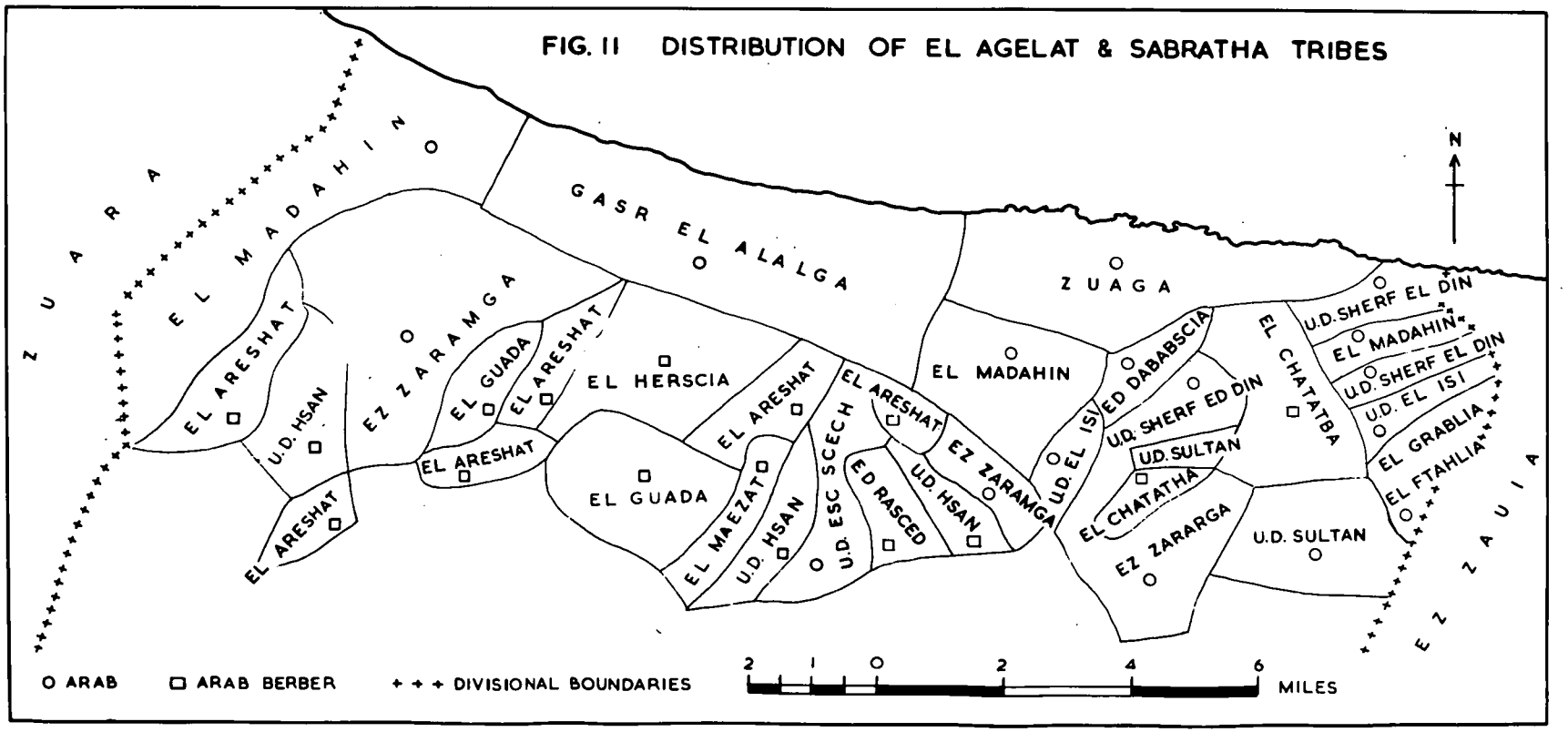


FIG. II DISTRIBUTION OF EL AGELAT & SABRATHA TRIBES
N
ZUARA
EL MADAHIN
GASR EL ALALGA
ZUAGA
EL ARESHAT
U.D. HSAN
EZ ZARAMGA
EL GUADA
EL ARESHAT
EL ARESHAT
EL HERSCIA
EL ARESHAT
EL ARESHAT
EL GUADA
EL MAEZAT
U.D. HSAN
U.D. ESC SCECH
EL ARESHAT
ED RASCED
U.D. HSAN
EZ ZARAMGA
EL MADAHIN
U.D. EL ISI
ED DABABSCIA
U.D. SHERF ED DIN
U.D. SULTAN
EL CHATATBA
EL CHATATHA
EZ ZARARGA
U.D. SULTAN
U.D. SHERF EL DIN
EL MADAHIN
U.D. SHERF EL DIN
U.D. EL ISI
EL GRABLIA
EL FTAHLIA
EZ ZAUIA
O ARAB
□ ARAB BERBER
+ + + DIVISIONAL BOUNDARIES
2 1 0 2 4 6
MILES

	Cabila	Lahmat	Population 1917	Population 1957	Notes
56	el-Khatatba	el-Awamer el-Amaim el-Hadawla	1012	2241	
57	Zuaga	Ulad Mabruk " Masud " Faigh	766	2311	Arab-Berber
58	Ulad Sharf el-Din	Ulad Sharf el-Din el-Zararga	724	1759	
59	Gasar el-Alalga	el-Abadla el-Zukra el-Khudra	737	1537	
60	Ulad Sultan	Ulad Ahmed Ulad Abi el-Khair	625	1495	
61	Khurasan	Ulad Abdalla " Ibrahim " Berca		1169	Marabouts. These two tribes are related to each other as they were in one Cabila known el-Madahin
62	el-Madahin	el-Khalif el-Hawadi el-Agfaf	722	1172	
63	Ulad Iahia	Ulad Salem " Mohmed		754	Also related to each other
64	Ulad Isa	el-Khudur el-Gwamhia	811	714	
65	el Ftahlia	Ulad Rahuma " Khalif " Ibrahim		826	Marabouts. Also related to each other.
66	el Gharablia	Ulad Ahmed " Ghasem	834	871	
67	el-Barania -Strangers-	-	-	910	

E. Agelat

The name Agelat[14] was derived from a famous Saint known as Sidi Abu Agela

who came originally from el-Sagia el-Hamra in Southern Morocco at the end of the 16th century A.D. The racial composition of the Agelat people is largely made up from Berber elements mixed with Arabic Stock. In other words they are under the Arab-Berber racial category. (see fig. 11)

In the year 1917 Agostini gave a total population of 8,736 divided into eight tribes and by 1957 the figure increased to 16,594. The number of tribes did not change as happened in Sabratha and the only new Cabila to be found has been founded in 1947 also for provisional purposes for those who came from outside the area. The Agelat people are subdivided into two groups; firstly Ulad Hamid which includes the following four tribes; el-Areshat, el-Ghuada, el-Maezat and el-Hursha, and secondly Gehat el-Wadi which includes also four tribes; el-Zaramga, Ulad Rashed, Gehat el-Wadi and Ulad el-Sheikh. The tribal structure of these two subdivisions is made up as follows:-(15)

	Cabila	Lahmat	Population 1917	Population 1957	Notes
68	el-Areshat	Ulad Salama el-Salaihia el-Fzazna	1007	1647	Arab-Berber
69	el-Ghuada	el-Dwabba el-Magahdia el-Siah	1080	2097	Arab-Berber
70	el-Maezat	el-Bashakria Ulad el-Lafi el-Hammarin	871	1396	Arab-Berber
71	el-Hursha	el-Hursha el-Sarairia Ulad Bu Bakar	1042	1954	Arab-Berber
72	Gehat el-Wadi Ulad Husein	el-Bhalil el-Hara el-Abada	1336	2192	Arab-Berber

	Cabila	Lahmat	Population 1917	Population 1957	Notes
73	Ulad Rashed	el-Ztatra el-Sud Ulad Salem	1349	2527	Arab-Berber
74	Ulad el-Sheikh	el-Draba Ulad Salem " Musa	865	2340	Marabouts. Known after Sidi Abu Agela
75	el-Zarmga	Ulad Attia " Umar " Ali	1185	2017	Marabouts. Known after Sidi Zremeg
76	el-Barania	-		428	Founded 1947

F. Zuara

The district of Zuara, as already mentioned, is divided into three Mudiriat: Zuara, Regdalin and el-Assa. The racial contrast in the district is very well distinguished, the reason is that the centre of Zuara is the only place along the whole Libyan coast where the pure Berber element is still to be found. The relationship between the Zuarini, the inhabitants of Zuara, the the Nuail - the Arabs of the countryside - was always in favour of the Berbers. The reasons for this phenomenon can be attributed to many factors. Firstly, the Zuarini present a higher social class because of their better financial situation or in other words we find the social difference between the traders and the pastoralists. Secondly, the Zuarini have been always a settled people and always better educated. Thirdly, as Zuara is the only big market in the whole district and the Nuail have to go there to sell their cereals and animals and of course to buy their necessities, the economic balance between the two groups was weighted heavily in favour of the Berbers. It might be for this reason that the Berbers have always been against mixing with the Nuail and especially

from the intermarriage point of view as they consider the Nuail an inferior race with a lower standard of living. This situation resulted not only in class distinction but also in racial segregation. The crises of 1958 between the two groups did not only cause considerable economic damage but also extended to bloodshed. Consequently peace and tranquility were provoked and the whole district was under a state of emergency for a long period.

The population of the district are thus politically divided into two distinct divisions: (1) The Berbers of Zuara, and (2) The Nuail. Agostini in his work "Le Popolazione della Tripolitania" (1917, page 256) also classified the population into two groups:(16) (1) Zuara which includes (a) the urban people of Zuara or The Berbers (b) the rural tribes of Regdalin area, and (2) the Nuail. This picture has been changed as today's classification is based on linguistic and sectarian foundations which take into account only the distinction between the pure Berbers who speak the Mazih language and follow the Kharjets heresy and the Arabs who despite some racial diversity all follow the Malikia heresy and speak Arabic. Consequently this definition has resulted in a political re-unification between the Nuail and the tribes of Regdalin against the Berbers.

The total number of tribes compared with that given by Agostini has increased considerably, especially the Nuail tribes who form at present the Mudiriah of el-Assa, and have increased from 8 to 12. The tribes of Regdalin, who form at present the Mudiriah of Regdalin, have increased from 5 to 10. The increase in the numberof Berber tribes is lower, from 10 to 13. The tribal structure of the district will be dealt with separately. (see fig. 12)

1. Zuara

The Zuariņi are of Berber origin of Beni Walul tribe (17) of the Darisa

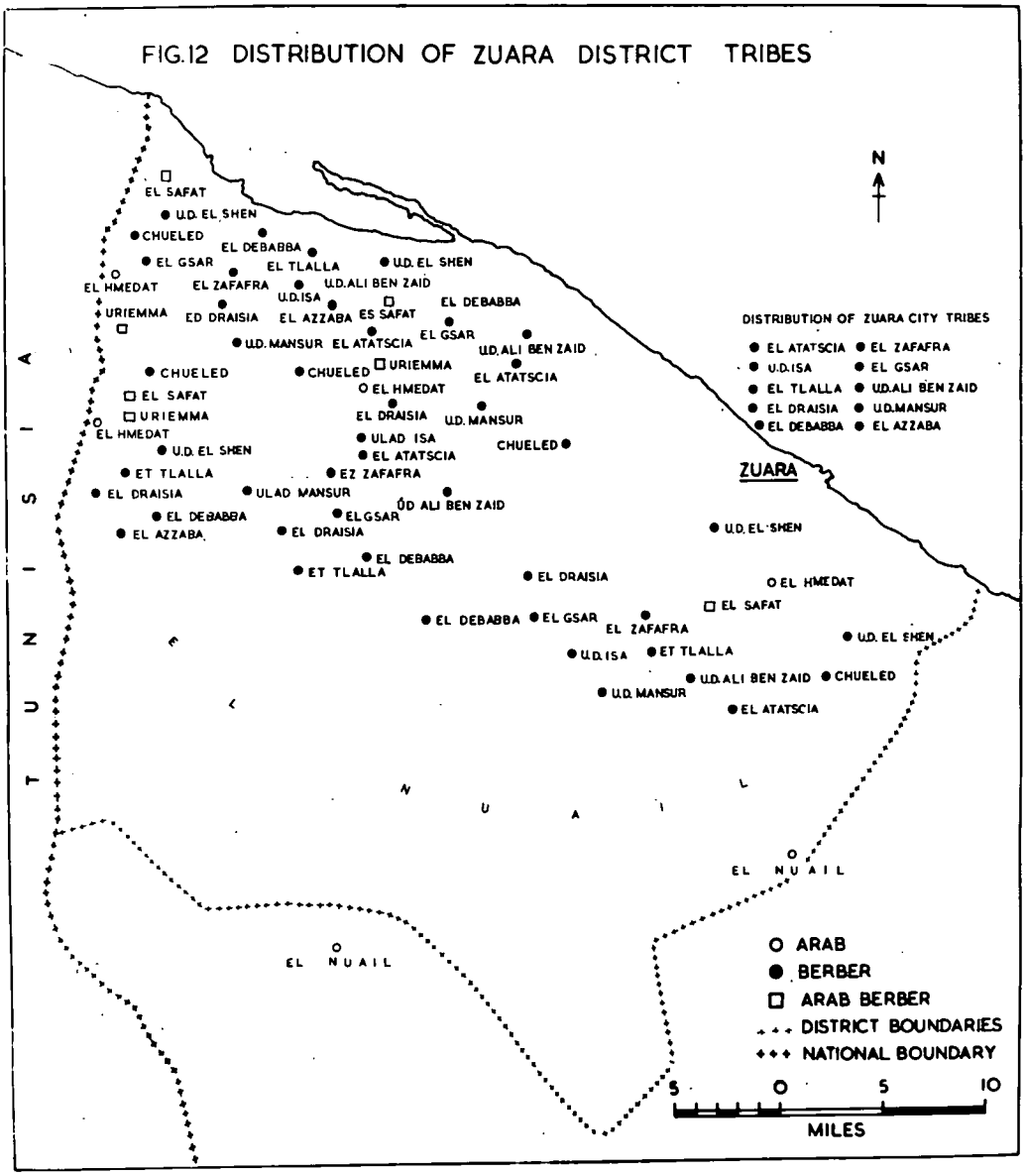


FIG.12 DISTRIBUTION OF ZUARA DISTRICT TRIBES
N
TUNISIA
EL SAFAT
U.D. EL SHEN
CHUELED
EL DEBABBA
EL GSAR
EL TLALLA
U.D. EL SHEN
EL HMEDAT
EL ZAFAFRA
U.D.ALI BEN ZAID
U.D.ISA
ES SAFAT
EL DEBABBA
URIEMMA
ED DRAISIA
EL AZZABA
EL GSAR
U.D. MANSUR
EL ATATSCIA
U.D.ALI BEN ZAID
CHUELED
CHUELED
URIEMMA
EL ATATSCIA
EL HMEDAT
EL SAFAT
EL DRAISIA
U.D. MANSUR
URIEMMA
EL HMEDAT
ULAD ISA
CHUELED
U.D. EL SHEN
EL ATATSCIA
ET TLALLA
EZ ZAFAFRA
EL DRAISIA
ULAD MANSUR
ÚD ALI BEN ZAID
EL DEBABBA
EL GSAR
EL AZZABA
EL DRAISIA
EL DEBABBA
ET TLALLA
EL DRAISIA
O EL HMEDAT
EL SAFAT
EL DEBABBA
EL GSAR
EL ZAFAFRA
U.D. EL SHEN
U.D.ISA
ET TLALLA
U.D.ALI BEN ZAID
CHUELED
U.D. MANSUR
EL ATATSCIA
ZUARA
U.D. EL SHEN
DISTRIBUTION OF ZUARA CITY TRIBES
EL ATATSCIA
EL ZAFAFRA
U.D.ISA
EL GSAR
EL TLALLA
U.D.ALI BEN ZAID
EL DRAISIA
U.D.MANSUR
EL DEBABBA
EL AZZABA
EL NUAIL
EL NUAIL
ARAB
BERBER
ARAB BERBER
DISTRICT BOUNDARIES
NATIONAL BOUNDARY
5 0 5 10
MILES

branch which is also a subdivision of the Madghis confederation. The Zuarini were 4,566 according to Agostini but by 1957 their total increased to 10,445 or nearly 34% of the whole population of the district. The three new tribes in the Mudiriah are el-Ansar, el-Cabailia and Ferua. The first was a lahma in el-Tlalla tribe and it became a separate tribe in 1946. The second has been missed by Agostini as it was a Cabila before 1917; while the third has been founded in the early 1940s, at Bu Chemasc area for those families who lived there as fishermen. The tribal structure of the tribes of the Mudiriah takes the following lines:(18)

	Cabila	Lahmat	Population 1917	Population 1957	Notes
77	el-Atatsha	Ulad Zaid " Arebi " Abdul Salam	652	1462	
78	Ulad Isa	Ulad Bacca " Bu Dib el-Fosta	780	1596	
79	el-Draisia	Ulad el-Hag " Ramadan	487	661	
80	el-Dbadba	Ulad el-Mahdi " Zaid		429	Mostly in the area between Tellil and Agelat
81	el-Tlalla	el-Gafafza Ulad Abi el-Shuwash	592	752	
82	el-Zfafra	Ulad Bin Ali el-Dhaimia el-Asbakh	580	1239	
83	el-Gsar	Ulad Griba " Said " Khalifa	565	1108	
84	Ulad Ali	el-Amarmia el-Maltia	419	730	

	Cabila	Lahmat	Population 1917	Population 1957	Notes
85	Ulad Mansur	Ulad Said " Iahia " el-Hag	255	630	
86	Azzaba	Ulad el-Hag Sulaimon " Bin Gbara	237	406	
87	el-Ansar	el-Sahamnia el-Ashashna	-	511	
88	el-Cabailia	el-Cabailia	-	398	
89	Ferua	-	-	147	

2. Regdalin[19]

The tribes of the Mudiriah, as mentioned previously, are of different racial stocks. Ulad Nasar and their brothers Ulad Khalifa are Arabs also considered as Sheriff tribes, while el-Magadba and el-Sbanien are Marabouts and probably Arabs too. The rest are of Arab-Berber origin. From 1917 to 1957 the population of the area has increased from 3,089 to 9,412 or about 33% of the district's population. The tribal structure of the Mudiriah is as given below:

	Cabila	Lahmat	Population 1917	Population 1957	Notes
90	el-Magadba	Ulad Bin Nur " Mohamed el-Tuati	- 1000	1870	These two tribes have developed into two tribes from the Cabila given by Agostini as Khueiled. The date is not certain, but probably 1938.
91	el-Sbanien	Ulad Zaid " Milad		914	

	Cabila	Lahmat	Population 1917	Population 1957	Notes
92	Ulad Nasar	Ulad el-Hag " Nasar	436	832	In about 1940 these two tribes became separated. Their original name was el-Hmedat.
93	Ulad Khalifa	el-Ngagza Ulad Iahia		736	
94	Safat-Musaddeg	el-Musadga	768	549	The original name of these three cabail have developed from what was known as el-Safat. Their division probably took place in the early 1930s.
95	Safat Cradgha	el-Cradgha		855	
96	Safat Gatatia	el-Gatatia		813	
97	el-Sualeh	Ulad Khalifa el-Fogha	700	1019	The original name of these two tribes was known as Wiriemma and they have been separated since about 1925.
98	Beni Molid	Beni Molid el-Shbashba		1065	
99	Ulad el-Shein	el-Nasairia Ulad Usef	185	590	The only tribe still keeping its first name

3. el-Nuail[20]

The Nuail tribes are originally from Beni Suleim of the Beni Debbab branch. Their tribes present the largest group of semi-nomads in the whole western coastal region and their numbers have increased from 3,690 in 1917 to 9,581 in 1957 which gives about 33% of the population of the district.

The present picture of the Nuail tribal structure takes the following lines:

	Cabila	Lahmat	Population 1917	Population 1957	Notes
100	el-Tagagza	Ulad Harh " Masued	680	1167	
101	el-Gmaziz	el-Trarma el-Sud el-Abshar	663	1361	
102	el-Aaghib	Ulad el-Murabet " Khalifa	409	874	
103	el-Bherat	el-Snara Ulad Ali	225	690	
104	el-Acarta	el-Mashamir	302	240	In 1940 el-Ragaigia became a separate tribe from its brother el-Acarta
105	el-Ragaigia	el-Ragaigia	-	672	
106	Garager Mabrouk	Ulad el-Hag		780	These three tribes were in one cabila called el-Gargra. Their separation is not well determined, probably in the early 1920s.
107	Garager Misbah	" Mahmud	938	1088	
108	Garager Krima	el-Gheshta		515	
109	el-Magdba	el-Atamnia Ulad el-Kelani	413	615	
110	el-Ababsa	el-Dkhailia Ulad Mohamed		715	
111	Zenata	-	-	559	

Questioning any person, especially from the rural areas in Tripolitania today, where he comes from, the reply in most cases, besides mentioning his administrative area, would include the name of his tribe or the division his tribe belongs to. This situation, which does not apply to intellectuals who are very few indeed, explains the part the tribe still plays in the country's

life. But tribal influence does not stop there. For instance, in Zavia, where three major groups or divisions of tribes are to be found, marriages between these different groups are very infrequent and only through vital necessity. Moreover, some tribes do not allow exogamous marriage even with other tribes of their division. Partnerships in commerce, agriculture or even on a smaller scale - shopping for example - are also mostly preferred on a tribal basis, if not restricted to the tribe or division members. However, the climax of tribal influence is in political spheres, where under no circumstances will a vote be given to a candidate of another tribal division.

Tribal influence has been considerbly reduced since the Turkish domination, in which only the Kologlis were of great importance. Conditions under the Italian regime did not differ very much. Real improvements, though still very limited, started with the British rule and the increase in education. Generally speaking the elimination of tribal influence will be possible only when the present state of illiteracy can be eradicated which will take half a century at least.

References:

(1) General Population Census of the United Kingdom of Libya, 1954, pp.1-3.

(2) Preliminary Result of the General Population Census, 1954, pp.15,16.

(3) E. Agostini. Le Popolazione della Tripolitania, 1917, p.217.

(4) Ibid, pp.209-217.

(5) Ibid, pp.222-223.

(6) Ibid, pp.232-234.

(7) Ibid, pp.229-231.

(8) Ibid, pp.235-236.

(9) Ibid, p.236.

10. Ibid, p.236.

11. Ibid, pp.237-238.

12. Ibid, p.239.

13. Ibid, p.251-253.

14. Governo della Tripolitania. Caza il Agelat Tripoli 1912, p.40.

15. E. Agostini, op.cit. pp.249-250.

16. Ibid, p.256.

17. Ibid, p.255.

18. Ibid, pp.257-258.

19. Ibid, pp.259-260.

20. Ibid, pp.261-262.

PART II

CHAPTER III

A, DEMOGRAPHY

Introduction

Unfortunately, no records or even reasonable estimations are available for the population of Tripolitania before 1930.

Undoubtedly, a population of about three-quarters of a million for Tripolitania as estimated under the Roman rule, which is rightly considered the most prosperous period in the country's history, shrunk considerably under the Arabic and Ottoman Empires. The reasons are many:-

(1) Lack of stability and security.

(2) The Arabs regarded the territory as a bridge or transitional area to north west Africa which is more favoured environmentally and economically.

(3) Devastation of the country agriculturally by the Beni Hilal and Beni Suleim tribes.

(4) It is likely that a fair number of Tripolitanian youths joined the Moslem army and left to el-Magreb.

(5) Many others were killed during the fierce battles between the Berbers and the Arab invaders.

(6) Neither the Arabs nor the Turks showed any willingness to co-operate with the local people who were treated as an inferior race.

(7) The failure of the Turkish governors to provide economic security and to govern the nomadic tribes who continued to menace the coastal strip and its agriculture.

Thus, as far as peace, economic development and social welfare were

concerned, all major factors in any population growth, conditions were very bad indeed for many centuries, until Italy fully subdued the country and maintained peace and security.

The Italian occupation began in 1911 when Italy declared war on Turkey and sent her troops to conquer Tripolitania. This task was very difficult, not only because of the strong opposition shown by the natives, which was of religious significance, but also because the outbreak of the World War I made Italy preoccupied with her home front. Consequently both Tripolitania and Cyrenaica became no more than military outposts seriously menaced by native uprising for a long period. From 1920 onward both provinces were re-conquered. However real peace could not be provided in the interior of Tripolitania before 1925 while fighting continued for extra ten years in Cyrenaica.

This occupation, which took at least ten years of real war, also resulted in a decline in population, though less remarkable in Tripolitania than in Cyrenaica. This phenomenon can be briefly described by quoting C.L. Pan's words "during the interval many natives fled to the neighbouring countries, particularly from Cyrenaica. Of the natives who remained one-third to one-half were removed to guarded quarters in desert areas. The hardship involved in this mass removal caused many deaths"(1) But to what extent did this occupation reduce the country's population? A determined and reliable answer to this question is too remote mainly due to the absence of any prior census and therefore no accurate estimate is possible. Certainly the loss of population, whether caused by emigration or by death, was great but not to the extent described by Y. Asali: "who of us will forget that the population of

Libya was more than a million and now it has been reduced to far less than a million."(2) Broadly speaking, if this was true, and Agostini's figure of 700 thousand in 1917 is also correct, then it means that half of the Libyan population has been eliminated. Personally, I believe that during the Turkish regime, aptly described by E.W.P. Newman: "Under the Turkish rule the administration of Libya, as of other parts of the Ottoman Empire, was as corrupt as it was inefficient, while the justice was a mere farce for the benefit of those who administered the law"(3) - the population of Libya as a whole never exceeded three-quarters of a million, of whom 75% were Tripolitanian.

As for emigration, we find that the most desirable places for Tripolitanian emigrants under normal and peaceful conditions, are Tunisia and Cyrenaica. However, the latter was excluded because of the war state in that part of the country as well. This left Tunisia alone in the field, especially if we regard the hostile relationship between the Italians and the French at that time. Rough estimates of Tripolitanians who were forced to migrate, and it must be emphasised that these estimates may be Moslem exaggeration. The truth may be something between 4 to 6 thousands. This figure presents about 40% of Trablsia - Tripolitanians - found in Tunisia today. Generally speaking, there is a total of about 10 to 12 thousands of the Trablsia in Tunisia today, caused largely by the threat of periodical droughts which occur at least once every ten years and lead to a widespread unemployment. Thus the search for work has been and still is a very sound reason behind the growth of this minority in Tunisia. Some of these Trablsia became Tunisian citizens though they still bear their name while others remain Libyans. The majority of them

are engaged as workers in the phosphate mines at Gafsa and the rest are agricultural labourers and shepherds. Only a few of them become successful merchants.

Measuring the loss of natives as war casualties also needs some caution. Figures differ from 2 to 4 thousand. However a minimum of two thousand seems probable, together with a minimum of about 500 exiled, hanged and died in prisons. Thus we find that this military action has cost Tripolitania alone something between 7 to 9 thousand souls, mainly young people. These were the immediate social consequences of the Italian occupation; others followed during the rest of their domination as a result of embarking on their mass colonization schemes. The results, as mentioned in the chapter dealing with Italian Colonization, are:-

(1) Migration to neighbouring countries:

(2) The increase of Arab and semi-nomads and nomads:

(3) Enforcement of native youths to join the army:

(4) Migration to Tripoli.

Reliable data to discuss these matters in detail are not available. However as far as emigration to Tunisia was concerned we have come to the conclusion that the Italian military occupation was a major cause . On the other hand land acquisition by Italians for agricultural development did not in fact increase the number of Trablsia to any great extent especially if we repeatedly bear in mind that this land acquisition started, on a large scale, after the war emigration to Tunis ceased, in about 1920.

The Tripolitanian colonization project by 1930 gave a total of nearly one quarter of a million hectares of best lands. Cultivating these lands

on the principle of dry farming, by its Arab owners, gave them a source of living as well as a permanent residence not far from their original residence whether along the coast or on the Jebel. The consequence of acquiring such an area, which affected at least 20% of the whole population, forced the latter to move more frequently and to penetrate into areas where climatic conditions are less suitable for shifting agriculture and keeping livestock.

Another important result of this colonization was the spread of unemployment which faced those people who were left with no land property. At the same time there was a lack of balance between the incomes of the Italian citizens, whether agriculturalists or manual exployees, and the natives, who got only a marginal proportion of the financial resources whether in salaries, loans or grants given to the Italians. This situation caused a great desire among the native youths, who were tempted indirectly to join the Italian army. However this so-called choice changed a few years before the World War II when the native youths were called up as conscripts. During 1940 it was estimated that there were 60,000 Libyan soldiers, of whom 80% were Tripolitanians. Of these three thousand have been killed, according to figures taken from el-Alamein cemetery, also 20,000 have been captured as prisoners of war for a period of five years. In addition, we should remember the loss of about 1000 Libyan soldiers in the operation of reconquering the country of Somaliland between 1922-32.

The last phenomenon of the Italian colonization was the rapid emigration from the countryside and rural areas to the city of Tripoli. The main reason for this was the great opportunities for employment in construction projects, such as building the new city, roads, railways and for military

purposes. However this phenomenon which is largely due to the Italian development schemes, has contributed to a high extent in increasing the city's population as can be seen from the following statistics, despite their doubtful accuracy:-

Year	Population	Increase in numbers
1908-1911(4)	30,000	
1914(5)	30,383	383
1931	48,376	17,988
1936	59,296	10,920
1946(6)	125,514	66,218
1954	129,728	4,213

The fourfold increase in the city's population during the last 40 years and doubling its population in one decade 1936-46 is undoubted proof of the high extent that emigration to the city has contributed. Nevertheless it must be noticed that this migration was not only a local one; it was also due to the high number of Italian immigrants especially after 1936 as a result of accelerating efforts for the agriculture development. The defeat of the Axis forces in the last World War was a main reason for reversing the picture. From about 70,000, which presents the peak of Italians in Tripolitania during 1940 the total dropped to only 40,500 in 1946 of whom only 20,000 were city dwellers compared with a figure of about 40,000 in 1940. Thus we find that employment facilities especially between 1936 and the end of the War were the main reasons behind the quick growth of the City's population, whether by natives or Italians. Also from 1943, the date of the British occupation, and despite mass repatriation of thousands of Italian citizens, the growth of the City's population has not ceased. On the contrary it has accelerated due to employment facilities provided by the British Military forces and the policy

of equal partnership which aimed to give the Libyans the rights which they had not enjoyed during the Italian domination. The insignificant increase between 1946 and 1954 despite the severe drought of 1947, was due to many factors:

(1) The decline of the British forces to a very small figure.

(2) Jewish emigration to Israel. Their total declined from 23,437 in 1946 to only 4,400 in 1954.

(3) Because of the excellent harvest of 1948/49 thousands of homeless and idle people were strongly tempted to return to their original homes.

Migration to the city before 1930 was very limited as there were no real opportunities for employment. Consequently people affected by the droughts whether from the Jefara or the Jebel used to migrate to the coastal urban and rural areas where they could easily find cheap shelter, water and dates. But since 1930 the line of their migration has changed considerably as it became diverted to Tripoli where not only water, dates and shelter can be obtained but also where a chance of getting a job is more certain. When this happens a great number of them prefer to stay permanently. This situation has created many serious problems, one of which is unemployment. Broadly speaking the city suburbs and the Arab quarter became over populated and together with very bad housing, health and food conditions it resulted in increasing diseases and crimes, especially thefts. On the other hand the effect of this unplanned migration on the countryside is very serious too because of labour shortage in agriculture which has not only been caused by migration to Tripoli city alone but also to Cyrenaica as well. Generally speaking the latter type of migration usually starts with youth immigrants seeking chances

for work. This sort of emigration, which is no doubt the reason that gave Cyrenaica its present population, began on a comparatively large scale only since 1947, when the family and not the individual became the unit of this semi-internal migration. The Trablsia in Cyrenaica are known to the local people as Magarba, and although they are concentrated in the towns of Bengazi, Derna and el-Marg the feeling between them and the local people is not very intimate and that is why intermarriage between them is very limited indeed. The total figure of the Trablsia in Cyrenaica is not decidedly known, but ranges from 15 to 20% of the country's population.

These general features may be summarised as follows:-

(1) Living conditions after the prosperous Roman rule declined considerably, and as a result there was a certain decline in the country's population.

(2) Instability which was the main feature of the Tripolitanian life during the Arabic and Ottoman Empires extended until about 1920 when Italy fully subdued the country.

(3) The loss of the natives during this war was extremely great.

(4) After 1930 Italy did her best to encourage her citizens to migrate to Tripolitania.

(5) The Majority of the Italians, because of their defeat in the World War II, were repatriated.

(6) The Crises of Palestine in 1948 caused a great loss of the country's population.

(7) Opportunities for work is the main reason for the internal migration to Tripoli and Cyrenaica.

(8) The migration during the war against Italy was mainly to Tunis while migration to Egypt, Syria and Turkey was mainly from Cyrenaica.

(9) There is no reliable information regarding the demographic environment before 1931 when the first official Census took place.

EVOLUTION OF CENSUSES IN TRIPOLITANIA

Under the Turkish regime, which lasted till the beginning of the second decade of this century, no censuses were carried out. Taxation and government affairs were laid down on estimations given by the Sheikhs. One of these estimations was held in the year 1843(7) in which the population of Tripolitania was estimated at 515,000 souls plus 70,000 for Fezzan, which until recently used to constitute an administrative district belonging to Tripolitania. Another estimation was made during the rule of Ibrahim Pasha 1909-1911. Returns were about 50,000 souls more than the previous one.

Conditions remained the same under the Italian occupation until the 1931 general census. During the 20 years preceding this census the Italians laid down their policy on the basis of the Sheikh's estimations till 1917, and on E. Agostini's findings from 1917 till 1931.

(1) 1917 Statistical Summary

For the first time under the Italian domination E. Agostini, an Italian Army Official, carried out a semi-official Census, or perhaps more defined as merely a statistical summary which came out in 1917 and it was called "Le Popolazione della Tripolitania". This work was a tremendous document as regards the country's tribal structure, but on the other hand it gave very little demographic data. The returns of this so-called census are not reliable to be used as a basis for determining the trend of the population. They are not sufficiently accurate for the simple reason that there was a lack of co-operation from the natives who were, especially in the interior, still

in a state of war. The total population according to this summary was 569,093 for Tripolitania which includes Fezzan. Details and distribution of these returns for the western coastal region were given in the chapter dealing with the tribal structure.

(2) 1931 Census

In this Census three different schedules were used.(8)

(1) Complete listing of data for each Italian individual.

(2) Separate listing of information for each member of each native family, less detailed than the Italian enumeration.

(3) Collective information for native families without any identification of individuals.

This Census was based on the de facto - present population - method and it was carried out by the Italian "Instituto Centrale di Statistica."

The returns of this Census have classified the country's population, according to their way of life, into three different types:

(a) Settled people This group was defined as families having their residence in a definite area with provisions for water and other needs and a periodical sowing, pasturing even at a distance.

(b) Semi-Nomads were defined as family members who move more frequently and cover greater distances either within their own territory or to other areas.

(c) Nomads Families though they may have lands of their own, migrate for long periods to other regions; not necessarily moving together, but assembling in limited areas for water in the summer. They are entirely engaged in animal husbandry.

These three different definiations regarding types of settlement also applied to the 1936 Census.

However the 1931 returns also cannot be taken as á basis to show the population trends, due to two major defects: lack of familiarity of the people with such a practice,and the conditions of anxiety and unrest.

(3) 1936 Census

This Census was carried out by the same institute and it was based on the de jure - resident population - method. Experience gained from the 1931 Census caused some modifications including (1) a statement of name, father's name and surname for natives to establish their identities as they only have first names; (2) listing of information by native individuals; (3) dividing the towns into sectors and the rest of the territory into districts corresponding to localities inhabited by various tribes to facilitate the job. Therefore the results of this Census can be considered more satisfactory than the previous one.

The returns of these two Censuses, which include Fezzan, are given below:-

Year	Total Population	Natives	Italians	Total increase
1931	543,272	513,203	30,469	-
1936	651,589	608,188	43,401	108,317

The annual increase of population between the two Censuses was estimated at C. 4.8% if Fezzan is included and C. 2.6% if not, compared with an annual percentage of growth of 2.3% for Libya as a whole.

Two schedules were used in the 1936 Census, both of them called for a listing of information by individuals: (a) for natives (b) for Italians and foreigners.

Persons to be enumerated were those who had their permanent or regular

residence whether they were present or temporarily absent. The time chosen for the Census can hardly be termed as suitable. The semi-nomads and nomads move freely during the winter and spring seasons owing to the fact that sheep and goats require no drinking water, whereas from May till the end of the summer season the people mentioned above are obliged to live near the wells for watering their livestock. Therefore the arrangement of the 1936 Census in the month of April was a great disadvantage. On the other hand this essential rule was wisely followed when the month of August was chosen for the 1954 Census.

(4) 1954 Census

One of the United Nations recommendations to the Libyan government was to hold, by the assistanceof the Organization experts, a general Census. Thus under the guidance of the United Nations the Libyan first national Census took place in 1954. But does the fact that it is a national Census, supervised by the United Nations experts, mean accurate data, especially in an underdeveloped country like Libya? To answer this properly let us see how population registration occurred prior to this Census. During the Italian occupation and especially towards its end registration of births, deaths, marriages, divorces and migration, which were submitted by the law, became fairly regular even among the semi-nomads and nomads. The outbreak of the World War II practically ended any co-operation between the natives and the Italian Authority, consequently registration of all kinds turned irregular in the whole country. Moreover a great part of the registration documents were destroyed during and after the campaign of North Africa. The British Authority made some real efforts to reorganize and develop the former Italian registration

centres or Municipalities. Despite the hard work devoted to this purpose, registration conditions were deeply in favour of suggesting far less accurate results during the whole of the 1940s. This was certainly the case during the severe drought of 1947 which no doubt resulted in a considerable false increase due to excessive declarations for ration cards. Arabizing the Italian registration forms was a very difficult task because of lack of capable and trained employees, and so a great deal of errors were caused, especially as regards ages.

In such conditions, Census reliability is doubtful especially when consideration is given to the high percentage of illiteracy, and to the apathy and suspicion of Censuses caused by long periods of oppression, and foreign domination.

On the other hand the 1954 Census which was based on both de jure and de facto methods can be considered more satisfactory than the previous Italian Censuses because of these reasons: (1) The use of fairly educated and capable enumerators; (2) Better methods of enumeration and tabulating; (3) The wide propaganda made before the Census; (4) The stable economic situation from 1949 to 1954 together with a wider spread of education made co-operation between the people and the Authority more effective than it was before the country's independence.

The 1954 Census returns were 738,338 persons in Tripolitania, of whom 37,655 were Italians.(9) These returns are far less than those estimates given by the British Authorities in 1946 when the need was felt for a fairly close estimation, mainly for rationing purposes.(10)

Year	Moslems	Italians	Jewish	Others	Total
1946	732,591	40,536	28,031	2,757	803,915
1954	692,093	37,655	4,449	4,141	738,338

In the cases of Jews and Italians, the decrease was mainly due to migration. On the other hand, as regards the native population it was due partly to false increase because of rationing cards and partly to emigration to Cyrenaica after the 1947 drought.

The 1954 Census classified the country's population, according to their types of settlement, into three categories[11] more convenient than those given in the Censuses of 1931 and 1936, mainly because of their more precise definitions:

(a) Settled population are members of households with a fixed place of residence during the major part of the year from which they do not move except occasionally or during the seasons of cultivation, harvesting or grazing. Town dwellers are included.

(b) Semi-nomads are members of households which move within the administrative territories, to which their tribes belong, in pursuit of pasture. They possess unirrigated lands for cultivation. Usually they do not leave their administrative boundaries except in severe drought years.

(c) Nomads are members of households who lead a typical nomadic life and do nothing but raise sheep goats and camels. They move to distant areas where they may stay for long periods before returning to their original place of residence.

The following statistics show the percentage and distribution of the present native population by their types of settlement:[12]

Administrative division	1931			1936			1954		
	Settled	Semi Nomad	Nomad	Settled	Semi Nomad	Nomad	Settled	Semi Nomad	Nomad
Libya	75.2	18.0	6.8	84.	10.9	4.2	73.2	18.0	9.8
Tripolitania	70.8	20.3	8.9	83.2	12.7	4.1	71.5	13.0	8.5
Zuara	82.3	17.7	Nil	77.6	4.8	17.6	76.5	23.5	Nil
Zavia	95.4	4.6	Nil	94.3	4.9	0.8	96.0	4.0	Nil

A first glance at the former table shows changes in percentages from one year to another. The real reasons which account for this are twofold, namely changes in the application of the term settled, semi-nomad and nomad from Census to Census, and secondly errors in the identification of geographical areas. The high percentage of settled people is due to the fact that the most important determinant factor in the distribution of population in such a semi-arid country is the availability of a more or less sufficient water supply. The abundance of the water resources and the domination of the Mediterranean climate are the reasons behind the concentration of the highest proportion of settled people in the maritime region. Because of the lack of these two essential factors of underground water and rainfall the decrease in population density is inevitable as we travel inland where first semi-nomadism becomes the main feature of the country life and which by penetrating far inland gives way to real nomadism.

In the case of the western coastal zone, details of the 1954 Census are not available yet. Figures obtained from the region's municipalities in 1957 gave a distribution, as shown on the former table, where only two types of settlement are to be found in the ratio of 86.5% as settled to 13.5% as semi-nomads. The latter type is found to be concentrated in the extreme west near the Tunisian frontier where both soils and water resources are slender and saline. The Nuail tribes of el-Assa present a form of semi-nomadism typical of the whole of our zone. But despite the high percentage of semi-nomads in Zuara district, the proportion of semi-nomads in the whole western coastal region is small.

Distribution of population

It has been previously mentioned that over 95% of the population of the

western district is concentrated in the western coastal belt. This belt is physically divided into two sectors: (1) From Tripoli City in the east to Agelat in the west; (2) from Agelat to the Tunisian frontier. The first is more agriculturally developed because of its abundant water resources and its comparatively fertile soils. The second is merely a barren area due to its limited water resources and its numerous sebkas. Because of these physical characteristics the population distribution between the two parts is in the ratio of 78.6% in the first to 21.4% in the second.

The oases along this belt are the real centres where most of the people are found. The differences in the sizes of population in these oases are related to water supply, sand dunes, availability of soil among other factors.

The comparatively high concentration in Zuara despite its small size is due to its geographical position near the Tunisian border together with being the capital of Zuara district and the only harbour in the whole western coastal region. Elsewhere the size of the oasis depends on its agricultural production.

Zavia, besides being the biggest oasis in the region, also enjoys the position of being Zavia district capital. Consequently it supports about 25% of the whole population of the western district and they are mainly concentrated in a circle of about 4 kms. in diameter from its Suk.

The centres of Zanzur, Sorman, Sabratha and Agelat follow in importance with less concentration than in Zavia and Zuara, which are considered as the only two urban centres. El-Assa, Regdalin, el-Gmeil, el-Harscia, Gudain, el-Maia and Saiad form a third group in which no real concentrations of population are to be found.

However, apart from Zavia and Zuara the rest of these oases are regarded

as rural areas and therefore the classification between the rural and urban population lies in the ratio of 68% rural and 32% urban.

Population Growth in the Western Coastal Zone

During the Turkish and the early years of the Italian occupation, the western district used to be administratively part of Tripoli province. Because of this no separate records are available for the two Turkish estimates.

Returns given by Agostini gave a total of 64,673, and distribution and composition were given by the minor administrative divisions in the chapter dealing with the tribal structure.

Totals of 1931, 1936, and 1954 Censuses are given in the following table, as well as their percentage of the whole Libyan population.

District	1931		1936		1954	
	Population	Percentage	Population	Percentage	Population	Percentage
Zuara	34,824	5.6	44,602	6.1	30.806	2.7
Zavia	39,894	6.1	50,408	6.9	115,114	10.4
Total:	74,718	11.7	95,010	13.0	145,920	13.1

The decrease of Zuara population between 1936 and 1954 is largely due to migration to Tripoli city especially after 1946 when the profitable contraband trade with Tunisia, which was practised during the war, came to a standstill.

From 1917 till 1954 the population of the region increased by 81,147 or about 2,193 a year. However, if Agostini's returns are too weak to support any population analysis, and if 1936 totals are considered as satisfactory, we find that the increase during the last 18 years amounted to 51,510 or about 2,861 a year. The rate of increase is therefore about 3% a year while the whole population of Tripolitania has only increased by 86,749 during this time,

which gives an increase of less than one per cent per annum.

Population Structure

Studying the western coastal belt by sex, age and marital status is not possible, because firstly details concerning these subjects by minor administrative divisions are not available for the last two Italian Censuses, and secondly final results of the 1954 Census are not published yet. However some light may be thrown on the matter by examining these subjects for the whole of Libya.

(a) Sex-Ratio The following statistics show the present native population of Libya by sex in the 1931, 1936 and 1954 Censuses.

Date of Census	Males	Females	Deficiency of Females	Males per 1,000 Females
1931	341,984	312,732	29,252	1,092
1936	377,416	355,557	21,959	1,062
1954	540,364	501,235	39,129	1,081

These figures suggest a relative under enumeration of women than of men in 1936. Returns of rebels after 1931 do not explain these figures, especially when the majority of them must be males. Broadly speaking the Libyan population is normally divided between the two sexes despite the slight preponderance of males ; a feature common to underdeveloped countries. Figures for Tripolitania alone in 1954 showed the ratio of 1073 men to every 1000 women while the ratio increases to 1093 males to 1000 females in Cyrenaica. However the ratio of Tripolitania is probably similar to that of our region, which supports about one fifth of the total Tripolitanian population.

(b) Age-Composition

The distribution of the Tripolitanian citizens or native population by age in 1954 is given below.(13)

Age in Years	Both Sexes	Percentage	Males	Females
All ages	694,685	100%	360,430	334,255
Under one year	22,339	3%	11,307	11,032
1 to 9	169,680	24.3%	83,361	83,117
10 to 19	133,305	19.1%	70,223	60,172
20 to 29	120,560	17.2%	62,772	57,787
30 to 39	80,679	11.4%	41,879	38,800
40 to 49	56,967	8.7%	27,670	28,290
50 to 59	46,442	6.6%	24,821	21,621
60 to 69	35,848	5.0%	18,987	16,861
70 years & over	32,575	4.7%	16,315	16,260
Unknown	403	-	194	209

Looking at the former percentages of the age distribution we find that the population of Tripolitania is demographically young; those who are under 30 years of age comprise 63.6% while about 83.7% of the total are under 50 years of age. These facts reflect not only the high fertility but also the conditions of hygiene, health, medicine, eduction and food, which are still very bad and need to be greatly modified.

Consequently this age composition reflects some very important consequences in the social and economic features of life whether in this region or the whole country.

Socially speaking, the result of the large number of people under the age of twenty complicated the problem of providing education facilities in an agricultural community with very limited income resources.

In 1951 Dr. Shenwani found that such educational opportunities were restricted to less than 20% of those who were under 20 years of age in the western district. Although the number of schools has increased considerably from 120 in 1951 to 250 in 1958, the figure is still very limited especially in the case of girls schools. To overcome this incredible shortage of schools means raising the figure to about 400 schools in the western district alone, which is financially impracticable under the present economic situation.

The absence of any permanent and important industries in this region together with the primitive methods of farming have caused widespread unemployment. Generally speaking, the labour surplus has made the utility of youth not only limited but also very marginal and has thus helped to create a low standard of living.

(c) Marital status by Age and Sex The following table shows the distribution of the Tripolitanian native population by marital status, age and sex in 1954.(14)

	Marital Status & Sex	Age in Years						
		All ages	15 & over	Under 15	15-29	30-39	40-49	50 & over
(1)	Males	383,039	240,863	141,799	100,538	45,639	30,629	64,077
	Single	218,065	76,633	141,393	68,716	5,373	1,210	1,226
	Married	150,357	150,254	47	28,449	38,090	27,828	55,880
	Married with 1 wife	145,836	145,736	45	28,217	37,247	16,710	33,542
	Married with 2 wives	4,352	4,349	2	328	827	1,053	2,241
	Married with 3 wives	164	164	Nil	4	11	44	100
	Married with 4 wives	5	5	Nil	1	Nil	1	3
	Widowed	6,790	6,782	5	457	666	709	4,950
	Divorced	5,579	5,575	Nil	1,575	1,350	809	1,820
	Unknown	2,248	1,619	354	1,219	140	68	202
(2)	Females	355,296	222,978	132,058	91,810	41,817	30,642	58,709
	Single	159,319	27,777	131,512	25,519	911	475	772
	Married	152,562	152,378	99	61,507	37,994	25,498	27,379
	Widowed	33,757	33,718	10	840	1,544	3,646	27,688
	Divorced	7,600	7,589	8	3,187	1,275	912	2,405
	Unknown	2,058	1,516	429	657	93	111	655

Of these figures we find: (1) Marriage among males and females under the age of fifteen is very insignificant. (2) Divorce among women under 15 years of age is more common than among men, while in the other age groups no common rule can be laid down except perhaps that divorced women are most common among

those who are between 15-29 years of age. (3) The percentage in all ages, of single males is about 58% compared with 45% for females. Moreover of the single males about 35% are over 15 years of age while the corresponding percentage for females is only 17%. (4) The percentage of males who are married to one wife is about 95.5%, which means that the percentage of polygamous husbands does not exceed 4.5%. This proportion is really very small and therefore has only a minor effect on population growth. (5) The percentage of divorced men to the total married men is 4% while the corresponding percentage for divorced women is 4.5%.

Generally speaking the extent of marriages, remarriages and divorces is controlled indirectly by the general economic situation. For example new marriages and remarriages, especially for those who are over the age of fifteen, become very noticeable during the prosperous years. On the other hand divorces are most frequent during drought years when chances of employment turn very limited.

(d) Other differentials Religious and language differentials in our region are of no importance due to the fact that more than 98% of the population are Moslems and speak Arabic. The Berber of Zuara who are bilingual, speaking both the Mazih and Arabic, represent no more than 5% of the area's population.

Distribution of population by race and minor administrative divisions are given below. Figures mentioned in this table represent the population in 1957.

Administrative division	Arabs	A.Berber	Berber	Kologlis	Negroes
Zanzur	Nil	23,036	Nil	322	380
Zavia	17,650	5,934	Nil	8,124	800
Sorman	6,821	11,939	Nil	Nil	500
Sabratha	15,728	Nil	Nil	Nil	450
Agelat	Nil	17,023	Nil	Nil	420
Zuara	9,493	9,382	10,204	Nil	520
Total	49,692	67,314	10,204	8,446	3,070

The level of fertility, mortality and natural increase

A rough measure of the fertility of native libyan women is furnished by the ratio of children under five years of age to women between 15 - 49 years old as enumerated in both 1936 and 1954 Censuses. This ratio is calculated at 683 children to 1,000 women in 1936 and 672 children to 1,000 women in 1954, while the ratio for Tripolitania in 1954 is only 666 children to every 1,000 women. These figures undoubtedly suggest that Libyan women are relatively fertile and consequently they imply a very high birth rate of about 40 per thousand population in 1936. This birth rate is regarded as a minimum estimation because of the probability that children under 5 years old were under enumerated in this Census. The crude birth rate in 1954 for Tripolitania is very high, about 39 per thousand of the population, although less than the rate of 41% for the whole of Libya.

As regards death rates it is more difficult to make reasonable estimations because data on mortality of the natives is more or less totally lacking. However 35 per thousand was estimated by C,L. Pan as a minimum death rate for Libya in 1936.(15)

Besides the two official Censuses there are some estimations carried out before and after 1954. Of these estimations one was given by Dr. Shenwani and it was issued by the Organization of the Vital Statistics of United Nations Technical Mission Libya, 1951. The area chosen for Dr. Shenwani's field work was Zavia district, which had a population of just over 100,000. Although the samples he based his final estimations on were very small, his study has shown some remarkable results. The official records of his samples, which totalled 2,390, were 46 births, 13 deaths plus two infant mortalities.

These records gave a crude birth-rate of 19.2 per thousand of the population, a crude death-rate of 5.9 per 1,000 of the population and the infant mortality rate was only 43.5 per thousand. On the other hand his personal research into the natural increase in Zavia resulted in the following rates, which are totally different; 56.2 per thousand as birth-rate and 39.9 per thousand as death-rate. By similar ways of study he came to the following conclusions as regards the whole Libyan population; birth-rate 53.2 per thousand, death-rate 42.2 per thousand of the population.

Returns of official records for the year 1957 in our western district showed the following:-

Locality	Births	Deaths
Zanzur	294	16
Zavia	1,056	84
Sorman	449	72
Sabratha	415	87
Agelat	282	50
Zuara	505	50
	3,001	359

These figures give a birth-rate of 19 per 1,000 and a death-rate of less than 3 per thousand, which of course is extremely doubtful. Rates given by Dr. Shenwani for the native population of Zavia district in 1950 were not so far different from those in 1957 when the birth-rate was 11 per thousand and the death-rate was 6.3 per thousand compared with 15.2 and 7.1 per thousand for the Italian citizens.

However, the calculation of reasonable rates under the present state of registration is impracticable and one may come to a conclusion that the best way perhaps is to take the rates of Egypt as an example. Egypt is a Moslem

country in which agriculture dominates the way of life and where health, medical, hygiene, education and food conditions are more or less the same as in Libya. Beside these similar characteristics Egypt has reasonably adequate vital statistics including life tables. The P.E.P. volume "World Population & Resources" (London, 1956, p.127) estimated for Egypt a birth-rate of 43 per thousand and a death-rate of 20 per thousand, which implies a natural increase of 23 per thousand or 2.3 per cent as annual rate of increase. Between 1936 and 1954 the Libyan annual rate of increase is 2.6 per cent which therefore seems reasonable. The fact about the low annual increase, less than one per cent, for Tripolitania alone is mainly due to emigration whether to Italy, Israel or to Cyrenaica, as we have seen.

The reasons behind the high birth and death-rates are those we expect to find in any underdeveloped country, especially the Moslem ones. (1) Early marriage and a very low proportion of women remaining spinsters. (2) The religious belief that encourages marriage. (3) The complete absence of any sort of entertainment for the majority. (4) The engagement in agriculture and consequently the need of more labour. (5) The domination of the "joint family" in which father is responsible for marrying his sons as soon as possible for the sake of being a chief of a large family. (6) The high percentage of illiteracy especially among women. All these major factors contribute to the high birth-rate. On the other hand limited maternity and medical services, insufficient food (less than 2000 average daily calorie supply per head) and bad health and hygiene conditions all contribute to the high death-rate which is expected to continue, for at least two decades, as high as it is now.

Density of population and future Aspects

Libya is rightly considered as one of the under-populated countries. The population density is less than one person per square mile. The Wylait of Tripolitania with an area of 106,771 square miles and a population of just over 700,000 has a density of 6.7 persons per square mile. However this density does not show the real distribtuion of the population of the province because of this area only 44 thousands of square miles are cultivated, which gives a density of about 13 persons per square mile of cultivated land. In the case of the western district, which supports one fifth of the provincial population, we find that the total area of this district is 2,930 square miles and the density about 50 persons per square mile. The area of the western coastal region, which is the subject of our study, and supports more than 95% of the population of the western district, is only about 1,100 sq. miles or a density of about 122 persons per sq. mile, the third highest in Tripolitania, after Tripoli city and Suk el-Guma district. Economically speaking the population density of our region is very high in an area where no industries are to be found and where primitive methods of agriculture are the basic features of life. The highest density concentration, about 3,000 per sq.mile, is found in Zavia town.

If the present annual 3 per cent rate of increase in this region continues, which is very likely, the zone's population will increase by C.30,000 every ten years which under present economic conditions will be a heavy burden and will no doubt reduce the present standard of living unless real efforts are made (1) to expand the static farming south of its present limits, (2) to utilize the artesian water for more intensive agriculture, (3) to improve the present

Arab and Italian way of farming, and (4) to introduce new industries and to improve the present olive oil industry.

The picture in Tripolitania as a whole is also alarming in view of her limited resources. Unless commercial petroleum in large quantities is discovered, real opportunities for improving the standard of living are remote. Moreover, any population increase will cut down the present living conditions which still are very low and need to be modified.

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PART II

CHAPTER III

B. HEALTH

Tripolitania is a healthy region and its population is not exposed to the major debilitating diseases which cause so much illness in many sub tropical countries.

Naturally, there is sickness in Tripolitania but the main disease problems spring from poverty and lack of adequate food particularly in the case of children. Three major preventable diseases are of special importance. All of them are a consequence of poverty and low standard of living, for the majority are unable to afford even a poor diet especially in drought years. These diseases are:-

(a) Infantile gastro-enteritis Reliable yearly statistics of infants losing their lives are not available. However a yearly minimum estimate for Tripolitania lies between 2,000 and 5,000. The ubiquity of this disease is due to the following factors: (1) The common practice of giving children adult food before they are able to digest it: (2) The contamination of food by dust and flies: (3) The illiterate status of the majority of the Tripolitanian mothers and their ignorance of many essentials of hygiene: (4) The insignificant income of the majority of the population, which prevents them from properly looking after their children's food and clothes. The reduction of the effects of this disease, which is no doubt one of the most important causes behind the high infant death-rate of about 350 per thousand, necessitates the following immediate steps: (a) Improving on the nutrition of pregnant women in order to stop children being born weak: (b) Concentrating on teaching the mothers how children should be brought up: (c) Giving extra milk to mothers who cannot

provide enough milk for their infants: (d) Eliminating the breeding of flies by making the public aware of their harm.

(b) Trachoma, the inflammatory eye disease. It is estimated that one person out of three has signs of active or past eye infection. On the other hand Dr.Shenwani in his report on the Vital Statistics of Libya (1951, p.137) gave the following figures regarding the effect of the eye disease on two of the Zavia tribes with a total population of 2,395:-

Kind of disease	Number of Cases		Total
	Males	Females	
Total blindness	26	44	70
Blind in one eye	59	54	113
Impaired vision	26	49	75

These figures give about 3% of the total population as blind, while the percentage for those who have one good eye is about 5%. In addition, another 3% have impaired vision. In other words about 11% of the total population suffer from this disease. The major cause of this widespread disease is the impossibility of keeping the eyes fully protected from the dust, which owing to the aridity is very common particularly during the summer season. Searching for the early cases, expanding on the present treatment facilities, and raising the standard of living in general are the best methods of eliminating the effect of this disease.

(c) Tuberculosis Rough estimations give about 700 new cases of pulmonary tuberculosis every year. The non pulmonary tuberculosis is much less known and the new cases of this type range from 70 to 100 each year.(2) This contagious disease is mainly restricted to Tripoli city where living conditions are usually very bad for the majority of workmen who because of their small

wages share rooms with no sanitation facilities and live at the minimum level. In launching the attack on Tuberculosis and illness in general, food rather than drugs is the most effective ammunition. The total cases of diseases recorded in Tripolitania for the following two years are as follows. Figures obtained from the Nazirate of Health in 1958.

Year	Cases
1956	10,148
1957	20,778

A rough classification of these cases is as follows:-

(1) Diseases of digestive system	17%
(2) Infective and parasitic diseases	13%
(3) Diseases of respiratory system	13.6%
(4) Deliveries and complications of pregnancy and childbirth puerperium	15%
(5) Symptoms, senility and ill-defined conditions.	12.7%
(6) Diseases of circulatory system.	3%
(7) Nervous system, skin disease and blood disease	25.7%

Of this grand total about 75% are due to the three preventable diseases discussed above.

It is beyond any doubt that the main cause of disease in Tripolitania is the lack of food. The Tripolitanian food supply, which is highly sensitive to crop fluctuations, caused largely by inefficient and insufficient rainfall, differs from one year to another. Consequently food consumption inevitably fluctuates from harvest to harvest according to the availability or deficiency of the major food items, namely barley, wheat and dates.

The average daily consumption per head of the different food items is

estimated as follows:-(3)

Item	Quantity (in grammes)
Grain	300
Dates	70
Sugar	27
Olive Oil	10
Milk	100
Meat	20

The caloric content of these items is roughly estimated at 1,600 calories per person a day. The consumption of vegetables, eggs, butter, fish and other food stuffs varies among the different income groups but generally speaking it is very limited indeed. These items are also estimated to give about 200 calories per person a day. The total caloric content therefore is about 1,800. This estimate may exceed 2,000 calories in good years and at the same time it falls below the average in drought years. However this content is really very limited indeed if compared with 3,000 calories considered as adequate in the western countries. The only people who have a content equal to that of Western Europe are those of the high income group of the native population and of course the foreign population.

Up to now health services in Tripolitania are almost always directed to curing diseases while attention paid to preventive medicine is still insignificant. Many doctors believe that the best methods of prevention are (a) to enable the people to have a good mixed diet which without immunity to different diseases is impossible; (b) to educate the women to look after their children; and (c) to spread food inspection, which is still very limited especially in the rural areas.

There are ten hospitals in Tripolitania today in Tripoli city, Zavia, Misurata, Garian and Jefren. In other words each hospital serves c. 80,000

population if not more. The ratio of doctors to population is one to 8,000. Over 90% of the doctors are Italians which leads to misunderstanding and wrong treatment in many cases. The local doctors are very few and it will take 20 years perhaps to provide enough native doctors. Nursing is mainly restricted to male nurses because of the religious beliefs, which prevent women from contributing in public affairs. In recent years such religious ideas began to break down and it was for the first time that a female nursing school opened in 1957. Generally speaking, despite the limited numbers of hospitals, clinics, dispensaries and of course doctors, Tripolitania has a highly developed health service compared with Cyrenaica and Fezzan.

Health and sanitation of our western coastal belt are more or less typical of those mentioned before. The highly agricultural character of this area, the rapid improvements in the standard of education and the easy communication facilities are some of the reasons behind the improvement of the health services in this zone as compared with the other districts. In 1944 the first hospital outside the city of Tripoli opened in Zavia. This hospital is still comparatively small; it contains 100 beds, 3 doctors and 10 male nurses plus 5 female nurses of whom 2 are Italians.

Patients treated in this hospital, which serves the whole district, for the year 1957 are as indicated below:-

Total patients treated	1,424
Total patients discharged	1,335
General operations	410
Eye operations	198
Deaths	38

Figures were also obtained from the Nazirate of Health. Because of the high

prevalence of eye diseases, as can be seen from the former table, a new eye hospital was founded in early 1958 also in Zavia (see plate VII). These two hospitals are well organized and have modern equipment.

Before the foundation of Zavia general hospital the health services in the whole western district were entirely run by the dispensary doctors who were directly linked with Tripoli general hospital. This means that it was up to the local dispensary doctor to treat the patient locally or send him to Tripoli. Nowadays, all patients are treated locally except in cases where the treatment is not possible in Zavia hospital and the permission to send a patient to Tripoli is given by the chief hospital doctor. Treatment, whether in the hospital or in the local dispensary is free only for those who cannot afford it. Such a decision is given by the Sheikh of the patient.

The number of dispensaries, doctors and nurses in the western coastal belt is as follows:-

Locality	Dispensaries	Doctors	Nurses
Zanzur	1	1	3
Zavia	2	2	8
Sorman	1	-	2
Sabratha	1	1	2
Agelat	1	-	2
Zuara	2	1	4
Total:	8	5	21

Doctors are shared between Zavia and Sorman and between Sabratha and Agelat. The ratio of doctors to the population is one to about 30,000 population if doctors of Zavia hospital are excluded and about 20,000 if included. Therefore the doctors are still very limited although it is better in this region than elsewhere except for Tripoli city where about 75% of the

country's doctors are to be found.

Broadly speaking, the health services in our region require urgent improvements. Doctors not only need to be stationed in the big centres but also in the rural areas, Sorman, Agelat, Regdalin, el-Assa. Another hospital should be built to serve Zuara district together with two eye hospitals in Sabratha and Zanzur. More important still, doctors should be imported from other Arab countries if possible, to avoid the language difficulties. Also more chemists shops are required; there is only one in Zavia at the moment.

The best method of improving the general health standard is that more care should be devoted to the health of the young generation especially in the case of students where the possibilities of curing any sort of disease are more practical. This can be done all over the country firstly by expanding the medical, eye and dental inspection by appointing three doctors for this purpose in each district and who can devote their work to public inspection during vacation, secondly by improving on the present free breakfast given to the elementary pupils and thirdly by providing clothes for those who cannot afford them. On the other hand and as regards the whole population the following immediate steps are necessary: (1) Inspection of the commodities sold in the public markets especially meat and vegetables; (2) Improvement of the present domestic water supply, which in most cases is contaminated with dust and other impurities; (3) Street cleaning; (4) Providing more cheaper drugs; (5) Propaganda against flies; (6) Explaining to the public the danger of close family inter-marriage.

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P A R T II

CHAPTER III

C. EDUCATION

Introduction

Education is of no direct concern to geographers in developed and advanced countries where citizens are fully aware of their rights and obligations. On the other hand education becomes an important factor in the future development of the underdeveloped countries like Tripolitania. Therefore it is vitally important to envisage and give some idea about the amount of education, its kind and its future needs.

During the last 15 years despite the tremendous increase of schools, pupils and teachers Tripolitania as a whole still lacks further education, especially agricultural education upon which any further development and expansion of the economy will depend.

Rough estimates show that over 75% of the total population are illiterate, and that most of these live in rural areas. This striking fact means that agriculture, which is the main source of income for over 80% of the total population, is primitive and backward, which directly means a very low standard of living for the majority. This is true as regards native farmers but on the other hand Italian farmers are economically much better because of many factors, one of which is education.

Conditions in our western coastal region are slightly more favourable than elsewhere outside of Tripoli city. Literacy here is over 30%. The fact that over 85% of the people are engaged in agriculture illustrates that some have received some education. Moreover there is a school for every 2,500 persons,

compared with 3,000 elsewhere, and the total number of students represents one quarter of the total number of students in the country while the population of the region is only one fifth.

Despite all of these advantages illiteracy is still a main feature of life. Naturally under such conditions the majority's response and awareness of the world and environment is very limited indeed. This undoubtedly results in lessening any technical and material improvements without which no agricultural progress can be achieved. Moreover such widespread illiteracy reduces both hygiene and medical improvements, which are important factors in population growth. Also it discourages the demand for a better standard of living.

Therefore immediate and effective steps should be taken to eliminate the present illiteracy status. Only then further development in economic and social life in general can be possible.

Education under the Turks

Education, using the term in its narrowest scope, was very limited if it ever existed under the Turkish and Italian regimes. One reason for the lack of education under the Turks was to maintain their rule, which was violently threatened wherever local inhabitants had opportunities of receiving some education. Examples of this phenomenon occurred in Egypt, Syria and Iraq which were also governed by Turkey. The national upheaval in these countries, though it was very limited, caused strong demands claiming independence. To avoid such an upheaval in Tripolitania, Turkey maintained illiteracy at a high level by opening very few elementary schools instructing in Turkish. Moreover the Turkish governors were not interested in developing the country, but only in collecting taxes and protecting the frontiers of their Empire. The

Caliphate and the religious beliefs were also factors in maintaining the religious education, which meant in the first place to teach the people how to obey their rulers and also how significant is the second life. Consequently modern education was considered a great sin and leads to agnosticism. Therefore only a few hundred pupils in the whole country obtained an elementary education. Generally speaking the whole purpose of the Turkish educational system was to provide some local youths for clerical work. Therefore, it is not surprising to know that administration of the country was corrupt and inefficient.

Education under the Italians

Conditions remained the same at the beginning of the Italian rule and in fact all the Turkish elementary schools, due to the state of war, were closed for a considerable time. The Kuttabs or Koranic schools in which teaching is limited to Koranic scripture and elementary Arabic were the only source of native education. These schools, which were very limited too, are now very popular, and they are found practically in every village although with a better standard of teaching. Re-organizing the former Turkish schools and opening new ones was a very slow process before 1928. By the school year of 1931 there were only 21 elementary schools in Tripolitania attended by 1,376 pupils of whom 575 were Italians.(1) These figures explain the limited facilities provided by the Italian government for native education. Moreover instruction in these schools was mainly in Italian. History and geography of the Italian empire were the main subjects taught to the native pupils. The real reason behind such educational policy was to ensure that enough local youths were capable of speaking Italian and could thus work as intermediaries between their people and the Italian authority.

After 1931 efforts for agricultural developoment and military preparations were accelerated. The need for more local interpreters, clerks, drivers, etc. also accelerated the native's chance of receiving more elementary education. The balance between the Italian and native pupils was heavily weighted in favour of the Italians not only in the number of schools, pupils and the standard of instruction but also in providing a higher or secondary education. The first and only Arab secondary school was founded in the late 1930s, whereas several were already in operation for Italians. The other striking phenomenon was the distribution of the elementary schools. The city of Tripoli and the other big towns were the only places where the Arab schools were founded. Italian ones were built everywhere even in the smallest demographic centres. Moreover during the World War II all the Arab schools were closed and two years of schooling were completely lost.

Statistics of schools, pupils and teachers in the late 1930s are absent due to damage caused during the War. However a general idea may be given by the following table for the school year 1943/44 in which the Italian rule came to its end. Figures for the western coastal region are included in those for Tripoli province.(2)

Locality	Nationality	Schools	Pupils	Teachers
Tripoli City	Arab	6	1,543	52
	Italian	8	2,213	115
Tripoli Province	Arab	20	1,687	43
	Italian	29	1,022	47
Eastern Province	Arab	11	703	24
	Italian	14	739	29
Central Province	Arab	13	915	26
	Italian	2	81	4
Totals	Arab	50	4,848	145
	Italian	53	4,055	195
Grand Total		103	8,903	340

From this table we notice the insignificant differences in the extent of facilities devoted to the native and Italian elementary education despite the tremendous difference in the total population. Another important fact about the elementary education under the Italian domination was that all but one of the native schools for the school year 1943/44 were for male students. The result was that less than 400 of the total females at school age had the opportunity of education.

As regards secondary education we find it was very limited indeed, consequently no more than 200 native students were able to join the only secondary school in Tripoli. Apart from this small figure secondary and higher education under the Italian rule were confined to the descendants of the families forced to immigrate to Egypt, Syria and Turkey.

The defeat of the Axis forces in the campaign of North Africa in 1943 and the ensuing British occupation brought a revolution in Arab education. New schools were founded everywhere and for the first time in the history of Tripolitania schools began to find their way into the rural areas and the country side. The increase of Arab schools, pupils and teachers from 1943/44 to the school year of 1949/50 in which the British occupation ended is shown below. Figures are for the whole of Tripolitania.(3)

School Year	No. of Schools	No. of Pupils	Teachers
1943/44	52	4,570	151
1944/45	79	7,130	261
1945/46	79	8,655	267
1946/47	86	9,155	299
1947/48	92	9,841	347
1948/49	112	14,952	513
1949/50	125	16,211	609

These figures gave an increase of 240 per cent of schools, 354 per cent of

pupils and 406 per cent of teachers. These increases, which are very high indeed explain the great efforts made by the British authority despite its short regime.

Besides tremendous changes brought by the British in the Arab elementary education in which females began to contribute more than ever before, came the foundation of the first two secondary schools in both Tripoli and Zavia.

After Libya got its independence in 1951, as a federal Kingdom, efforts in the field of education were greatly accelerated under the Provincial Nazirate of Education and the Federal Ministry of Education.

(a) Nazirate of Education

Following the policy laid down by the British Authority for expanding the sphere of native education, the Tripolitanian Nazirate of Education took more positive steps aiming for quicker and more effective expansion. For instance from 1950/51 to 1955/56 the elementary schools have increased from 125 to 202. The number of pupils has jumped from 19,000 to nearly 40,000, of whom 7,000 are female students, while the teachers have increased from 609 to 1,238.

The distribution of schools, pupils and teachers by administrative divisions for the school year 1955/56 is as follows:-

District	No. of Schools		Pupils		Teachers	
	Males	Females	Males	Females	Males	Females
Tripoli D.	36	18	12,895	4,869	359	173
Western D.	34	9	7,847	630	226	33
Eastern D.	37	11	5,315	625	173	34
Central D.	41	16	6,221	894	195	45
Total:	148	54	32,278	7,018	953	285

Figures for 1958/59 are estimated at over 50,000 pupils, 300 schools and 1,500 teachers.

To provide teachers for the elementary stage, the Nazirate founded in the school year 1950/51 two teachers'training colleges, one for each sex, and by the school year of 1955/56 a second training college for males had been opened also in Tripoli city. By 1956/57 the third teachers' training college was opened in Misurata and in the following year 1957/58 the fourth training college for male teachers was founded in Jefren. Students attending these colleges for the school year 1958/59 numbered just over 1,000 of whom 200 were female.

As far as secondary education is concerned we find it is still very limited compared with the elementary. There are only four secondary schools in Tripolitania today; in Tripoli, Zavia, Misurata and Garian. In other words there is one secondary school for each district. The number of students attending these schools for the school year 1955/56 was 2,000 compared with only 200 in 1947/48. In 1955/56 secondary education was divided into two separate stages. The first is called the intermediate stage while the second has been given the name of secondary education. However, the number of students in both stages for the school year 1958/59 was still less than 4,000.

Education is free in all its stages, and there is a boarding school system in all the secondary schools to enable students from different parts of a district to attend school. Residence is free for those who are unable to pay.

Providing teachers for the secondary schools was a real difficulty. Egypt was the only Arab and Moslem country which could supply university graduates to fulfil this gap. In recent years the Egyptian teachers in Tripolitania are being gradually replaced by local graduates and by others from the other Arab countries.

Efforts made by the Nazirate of Education were also extended to provide other types of schools. In 1952/53 an agricultural college was opened in

Tripoli. Students attending this college were less than 200 in the school year 1958/59. In 1950/51 a clerical and technical centre was founded in Tripoli. The centre is estimated to support just over 400 students in 1958/59. In 1953/54 a handicraft institute was opened in Tripoli; students in this institute were less than one hundred for the school year 1958/59. There were also two religious institutions for providing more capable religious instructors in the Koranic schools.

Illiteracy is much higher among the older people (twenty five and over) because of the Italian imperialistic policy towards native education, and so the Nazirate found itself obliged to tackle this problem by encouraging adult education by opening night classes in different parts of the country. It is estimated that between 3,000 and 5,000 are attending just over 100 schools. The results obtained in this field, according to official information, are promising and there is a great demand on these schools. The Nazirate is therefore opening more schools every year.

(b) Ministry of Education

One of the first decisions carried out by this Ministry was the urgent need of university graduates to fulfil different aspects of the country's life. Thus steps were taken to send secondary school graduates to different universities abroad, especially to Egypt. The start took place in the school year 1950/51 with less than ten students. By 1958/59 it was estimated that over 350 students are receiving high education in more than ten countries, particularly Egypt, England and Italy.(4) Graduates for Tripolitania now exceed 200 of whom more than 20 are research students in England and the United States. Furthermore, the Ministry also helped in sending numerous individuals for qualifications in public services. The second decision brought into action by

this ministry was the foundation of the Libyan university which began her first academic year in 1955 when the Faculty of Arts was opened. Science and Commerce followed in the following year and it is hoped that Agriculture and Law Faculties will be opened next year. The distribution of faculties between Tripolitania and Cyrenaica is that all the Scientific branches or colleges will be opened in Tripolitania while the Arts colleges will be in Cyrenaica. The number of students in the Libyan university is still limited at less than 350, due to the fact that many of the secondary schools graduates still go abroad, especially for medical and engineering studies. Female Libyan university students began for the first time in 1955 when the first three Libyan girls joined Cairo medical college and by 1957 others joined the Libyan university itself. However, it is hoped that in less than 5 years time Tripolitanian graduates will fill all the present places engaged by foreign employees.

This is the general picture in the whole of Tripolitania and the question is to what extent did our western region contribute in this field?

During the Turkish and Italian rules there were very few elementary schools in this district; Zanzur, Zavia, Sorman, Agelat and Zuara were the only places for Arab schools. Italian ones were found, beside these places, in Oliveti and Sabratha. Since early 1951 the Italian government has undertaken financial and technical responsibility for the Italian schools in the whole of Tripolitania, which are estimated as sufficient for the need of their community. By 1958 the Italian schools in our region had been reduced to three at Oliveti, Zavia and Sabratha.

As far as Arab education is concerned, the western district and especially

its coastal belt is rightly considered as one of the best areas in the whole of Tripolitania in the number of its elementary schools,and their attendants as can be seen from the following table:-

Year	Schools		Pupils		Teachers	
	Males	Females	Males	Females	Males	Females
1955/56	34	9	7,847	630	226	33
1958/59	43	10	11,007	1,143	261	34

The total number of students in this region is about one quarter of the total students in the whole of Tripolitania while the population of the region is one fifth of the total population of the country. There is a school for every 2,500 people compared with one school for 3,000 people elsewhere in the country. The increase of female students is also very high during the last three years compared with the male students in this region.

The biggest elementary school in the area is at Zavia with 1,410 students. On the other hand the smallest is found at el Assa with only 16 students. The average number of pupils in each of the region schools is 256 pupils for males and 114 for females. Zavia also has the highest number of female students, but as far as the total population is concerned Zuara has a higher percentage. Generally speaking, the female schools, which are still restricted to the big centres of the area, need to be greatly increased. Also an intermediate school should be opened for female students in the near future as female education is still up to now restricted to the elementary level in the whole of this region.

Besides the elementary schools in the area, which are distributed on fig. 13, there are ten intermediate schools also shown on the same map. The total students in these intermediate schools are just over 500 and the

F. 9.13 DISTRIBUTION OF SCHOOLS IN THE WESTERN COASTAL ZONE OF TRIPOLITANIA

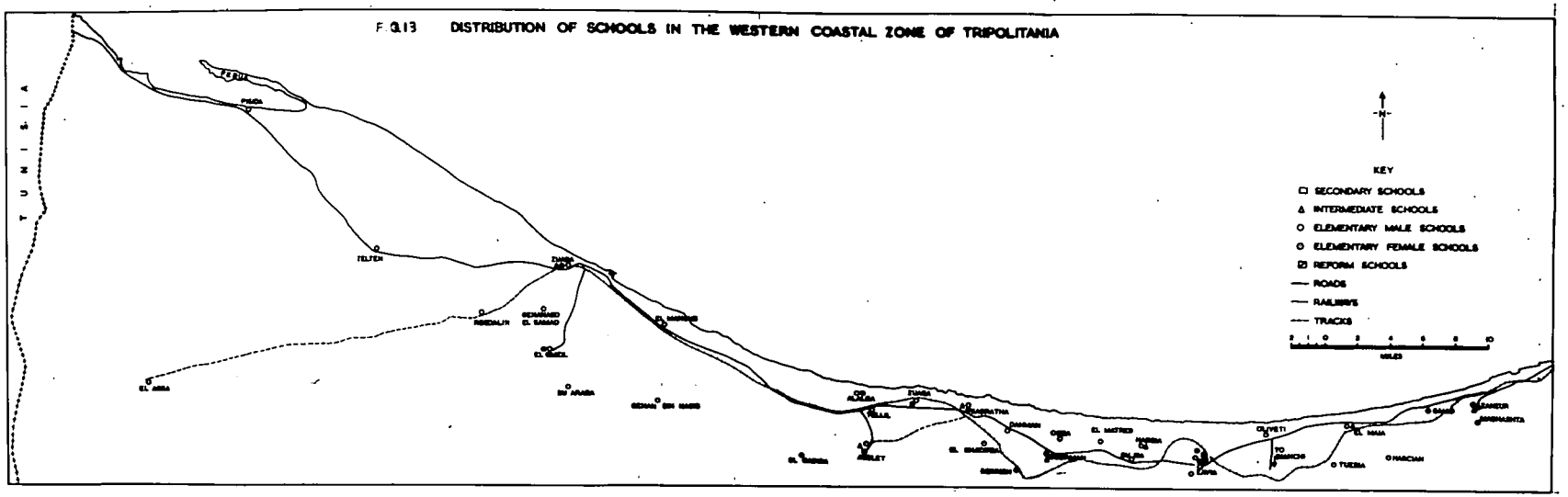


figure is increasing rapidly every year. This means that Zavia secondary school, which is the only one in the whole district, is incapable of providing secondary education for such a large increasing number. Therefore another secondary school should be opened in Zuara as soon as possible.

Zavia Secondary School The foundation of this school took place in the school year of 1947/48. It was the second one in the whole of Tripolitania after that of Tripoli city. There were only 22 students when this school first opened. By 1958/59 the number has reached 600 of whom 386 were boarders or students from outside Zavia town. The school staff also has increased from 2 to 42 for the same period. Distribution of the staff is as follows:- 7 Libyans, 24 Egyptians, 1 Syrian, 6 Jordanians, 2 Tunisians, 1 Algerian and one English. This school has played an important part as far as the present high level of education is concerned. University graduates in Tripolitania today are more or less shared between this school and that of Tripoli as the other two of Misurata and Garian are still new ones.

Also in Zavia there is a reform school of about 200 residents under the age of eighteen. In this school pupils attend an elementary school in the morning and learn different handicrafts in the evening.

Adult education

Apart from the Koranic schools, which are practically found in every village or tribe and provide adults with some religious instruction, adult regular schools were opened in a campaign to fight illiteracy. Figures (from Nazirate of Education) of operating schools, teachers and adult students for the year 1958/59 are given in the following table:-

Schools	Teachers	Classes		Pupils	
		First	Second	First	Second
31	70	41	29	948	545

The demand on these schools, which are found in all parts of this coastal region, is increasing very rapidly and the results are very promising indeed. Personally, I believe that the scheme is worth supporting and the only thing it still lacks is more propaganda.

In conclusion the following point must be stressed. No agricultural and technical schools have yet been founded in the region. This is a real disadvantage, and the present educational policy should be replaced by one more effective in agricultural education, which is essential in a community depending entirely upon agriculture.

References:

(1) The Italian in Libya. English Review, April 1934,pp.445-452.

(2) Handbook on Tripolitania. Appendix T. p.92.

(3) Report on the Libyan Economy, October 1956, pp.147-159.

(4) Ibid, p.169.

PART II

CHAPTER IV

SETTLEMENT

The Evolution of Settlement

Historically speaking, the western coastal belt has been of great importance since a few centuries B.C. This importance started when the Phoenicians opened up the Western Mediterranean to their trade and were making regular voyages to Spain since about 1,000 B.C.(1) Many geographers believe that the Phoenicians did not intend to occupy the Tripolitanian coasts. They think it was the necessity of beaching their small ships against the severe storms that was the reason behind the Phoenician occupation. Through the irregular landings, on these coasts, the Phoenicians learned more and more about the trans-Saharan trade, which supplied the ancient world with many valuable goods such as gold, precious stones, ivory and negro slaves. Because of that commercial position the Phoenician interest in the Tripolitanian coasts accelerated greatly and with that came the foundation of many commercial centres of which were Sabratha, Oea and Leptis.

Besides commerce, the Phoenicians were among antiquity's most skilful agriculturalists though because of the unfavourable climatic conditions, in the case of northern Tripolitania, no intensive garden cultivation was really practicable. In all probability, wheat, barley and olive trees, which they firstly introduced, were cultivated though in small areas.

The absence of Wadis in the western district as a whole, owing not only to its limited quantities of rainfall, but also to the fact that the Jebel lies at its furthest point from the shore, suggests that Phoenician agriculture,

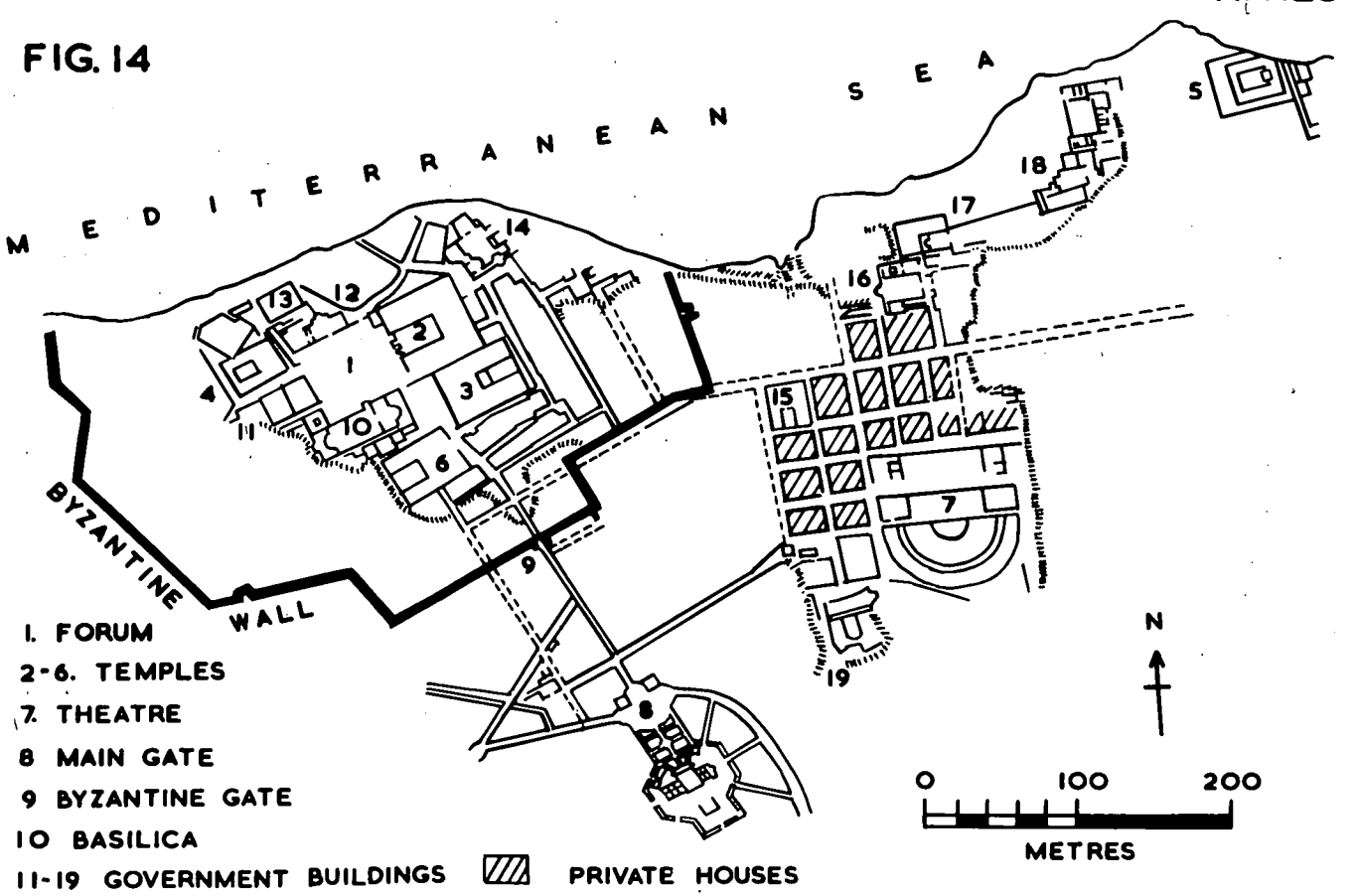
which was complementary to commerce, was of less importance in the western coastal region than it was on the eastern shore, near Leptis for instance. Thus it is difficult to ascertain the reasons behind the name of Sabratha, which means the wheat market, unless we take into consideration the fact that Leptis, which was the administrative centre of a fiscal district including Oea and Sabratha, was associated more with commerce and administration than with agriculture. In other words, it is likely that the main function of Sabratha was agriculture, more than anything else.

The recent excavations at Sabratha have shown that the earliest permanent settlement probably dates from the late fifth century B.C. and that the first considerable expansion of the town did not occur until the third century B.C. Because of the Roman occupation the town of Sabratha began to transform to a Roman city near the end of the first century A.D. At its peak there were about 1,200 houses which would approximate to a population of 6,000. D.E.L. Haynes in his book on the antiquities of Tripolitania, 1955, p.108, describes the houses of Roman Sabratha as follows: "The houses are often narrow in plan. Many of them had a cistern under the ground floor to collect rainwater from the roof. Many of these houses were at least of two storeys. The principal building materials used were an extremely friable sandstone from the quarries in the southern slopes of the coastal ridge." The latest excavations map of the town is shown on (Fig.14)

The Roman interest in the Tripolitanian shores was a combination of commerce and agriculture. Because cereals were badly needed in Italy, the Romans devoted more attention to agriculture. This was only possible by the following means: (a) making a full use of their agricultural skill:

RECENT EXCAVATIONS OF SABRATHA : AFTER D. E. L. HAYNES

FIG. 14



(b) depending on irrigated farming where the groundwater is available and also on the principle of dry farming wherever possible: (c) providing economic security. This was only practicable by keeping away the Berber nomadic tribes from the cultivated areas. To do this the Romans built many scattered forts in the interior and also strongly fortified their urban centres.

In the case of our region, Sabratha continued to play its usual part as an agricultural and trading port between the Sahara and Rome. However, we find that this centre, due to the comparatively more favourable peaceful conditions from the second till the end of the fourth century A.D. began to grow considerably. In other words Sabratha enjoyed a real urban life based upon (a) the export of olive oil mainly from the Jebel: (b) trade with central Africa via Gadames: (c) local agricultural products of which wheat was of special importance.

Apart from Sabratha very little Roman archaeological evidence is to be found in the western coastal belt. All remains lie west of Sabratha. At Pisida - Bu Chemmash - there was a Roman village built for collecting salt from the surrounding sebkas and for defence purposes. At Mellita a cistern has been discovered. At Tawilat el-Gazala another cistern of 7 x5 metres has been found, and D.E.L. Haynes mentions (p.136) thename of Zuara or Casas as a Roman station.

We may conclude that during the late Pheonician domination and also under the prosperous Roman rule, the western coastal region was of great importance, though less than the Leptis area in the east. Moreover this region was one of the first areas in Tripolitania where urban settlement is to be found. This urban settlement, which continued to exist until the invasion of the Vandal tribes, was restricted to the city of Sabratha alone. Elsewhere in the region settlement must have been of a rural character.

Both commerce and agriculture began to decline rapidly soon after the Arab conquest of the seventh century A.D. The nomadic and warlike invaders destroyed the Roman cities and also devastated the country's agriculture, mainly because they were interested in spreading their religion as quick as possible and as far as the Atlantic Ocean. Thus the whole of northern Tripolitania became no more than an area of transit to el-Magreb. Moreover the internal factor represented by the strong Berber opposition against the Arab rule had accelerated the destruction of the last traces of Roman civilization. From this time until the 11th century, life, even along the coastal areas, was a continuous struggle between the Arabs and the Berber on one hand and between the interior nomadic tribes and the semi-settled cultivators of the shores on the other.

In the 11th century the Beni Hilal and Beni Suleim tribes arrived from Egypt. Their arrival caused more troubles and because of their nomadic nature they were able to occupy the best lands. An example from our region is the retreat of Nefusa tribes who were living in Sabratha area, to the Jebel west of Jefren. Generally speaking, peace and security were completely lacking until the 16th century when Turkey occupied the country.

As far as settlement was concerned, during those long centuries, we find that it was largely dominated by dispersed mobile and dispersed permanent habitations. In other words a combination of the tent and the Zariba on one hand and a few scattered clay houses on the other.

After the Turkish conquest the unsettled forms of life of which agriculture was of minor importance began to crystalize slowly. Reasons for this gradual change, in my opinion, may be attributed to several factors, the first of which

was the arrival of numerous religious bodies from el-Magreb. These Marabouts served as rallying points for different tribes, and succeeded in gathering and collecting the members of the tribes they lived with in one particular area. The religious instructions and the need to build gathering places - mosques - formed the seed of a permanent residential place for many tribes. This means that houses were built around the mosque by the members of the tribe and in time this form of settlement began to take its shape as we will see later on. The gradual Berber conversion to Islam also played an essential part in the change. Struggle against the Arab diminished greatly when all the Berber became Moslems. Peace reigned, and this improvement enabled the Marabouts to carry on their religious instructions, and gave the people who lived in the oases more time to look after cultivating their surroundings. A third factor was that the Turkish rule produced the ethnic element known as the Kologlis. The social position of this group was far better than that of the others. The Turkish governors gave great allotments of best lands to these people. Cultivating these lands also helped sufficiently to create small dispersed hamlets,especially along the coastal oases like Zavia. Beside these factors we may add the existence of some Jewish families who for security reasons gathered together and formed a semi-nucleated pattern of settlement.

We must again bear in mind that the expansion of the coastal oases has always resulted from a kind of equilibrium between the nomadic force of expansion and the residence of agricultural population. This equiblibrium was heavily weighted in favour of the nomads from the 7th century until the 16th century and in favour of the agricultural population from the 16th century onwards. This means that from the Arab conquest until the 16th century villages

or hamlets were very scarce if they ever existed. On the other hand villages around the mosques subsequently began to form a semi-nucleated type of settlement. Such a form of settlement continued as a dominant type until perhaps the middle of the 18th century when the Turks began to establish administrative centres outside of Tripoli city, of which the police station was of special importance. Soon afterwards market places were built around these centres with a few shops and perhaps a very small garden. The growth of these centres continued very slowly until very recently, or until Italy fully subdued the country. The changes brought by the Italian regime were of great importance due to the fact that the Italians were able in a few years to get control over and in many instances to break up the nomadic tribes that had long been the masters of the country.

Generally speaking, before the Phoenician colonization the tent was the predominant dwelling all over Tripolitania, as the tent is commonly associated with the bedouin or nomadic way of life which is based on raising animals. (See plate VIII) The tent has continued until now as a dominant dwelling for both semi-nomads and nomads. Stone and mud houses on the other hand have been in existence in the towns as early as the colonization of Tripolitania by the Pheonicians. The present day ruins of Sabratha give an illustration of such urban development. After this urban decline the tent became once more a common form of dwelling and it was so until the end of the 16th century when the Saint's tombs began to be found frequently. Soon after that small hamlets began to grow slowly around these mosques. The gradual growth of these hamlets presents the dominant native rural type of settlement in our region today. After the Italian occupation this region became dotted with military

installations, camp buildings and modern administrative quarters. Roads and railways also added much to the native and Italian settlement as we will see later on.

DISTRIBUTION OF SETTLEMENT

Several times we have mentioned the physical contrast between the east and the west sectorsof the western coastal zone. This diversity of landforms and water resources has greatly influenced the pattern of settlement found today. In other words the pattern of settlement in the eastern part, which is more agriculturaly developed, is more or less urban in its general character. The western part, on the other hand, has typically rural settlement though a few exceptions are to be found in both parts as we shall see later on.

It is beyond any doubt that one of the major factors affecting and controlling the settlement pattern in our region and elsewhere in Tripolitania is the water supply, and that is why most of the dwellings outside the urban centres of Zavia and Zuara are scattered and separated by palm-trees.

Generally speaking there is no concern of defence and the people are nearly self-supporting. Field work is a family matter rather than communal one. Co-operative activities are irregular and limited to celebrations of marriages, births and deaths.

From the point of view of concentration and dispersion of settlement we may distinguish between three main types (see fig. 15)

(1) Nucleated permanent settlements: towns, small towns, Italian villages and market places (suks).

(2) Dispersed permanent habitations: houses (hoosh) straw hut (zariba) caves and Italian farm houses.

(3) Dispersed mobile habitations: tent.

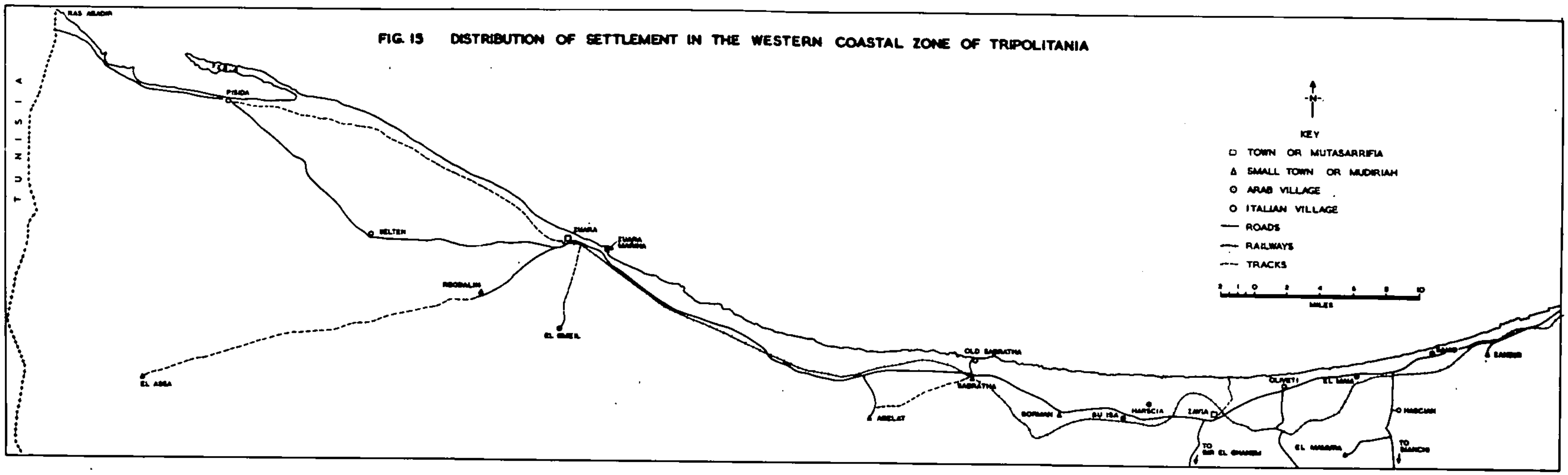


FIG. 15 DISTRIBUTION OF SETTLEMENT IN THE WESTERN COASTAL ZONE OF TRIPOLITANIA
TUNISIA
KEY
TOWN OR MUTASARRIFIA
SMALL TOWN OR MUDIRIAH
ARAB VILLAGE
ITALIAN VILLAGE
ROADS
RAILWAYS
TRACKS
MILES
PISIDA
BELTEN
ZUARA
OLD SABRATHA
SABRATHA
ZAVIA
BU ISA
HARSCIA
TO BIR EL GHANEM

Nucleated permanent settlements can be classified as follows:-

(a) Towns and centres of Arab origin with Italian modifications.

(b) Pure Italian villages.

(c) Pure Arabic centres and villages.

Only two urban centres, Zavia and Zuara, are to be found in the western coastal region. ZAVIA Town is the capital of Zavia district and the biggest centre in all the western district. The name Zavia is derived from the word Zawia, which means the place where religious instruction and Koranic scripture are learnt. But as there are two Zawia in Zavia oasis - Zawiat el-Abshat and Zawiat Ulad Jarboua - it is not certain from which Zawia the name was originally taken. Moreover Agostini suggested that the name was taken from Zawiat el-Amuri at Zanzur. However, some locals deny this suggestion and indirectly approve that the name was derived from Zawiat Ulad Jarbona, which is more ancient than the other two.

The foundation of Zavia, in my opinion, was due firstly to the numerous Maraboutic tombs found in the area, the first of which, Sidi el-Beshet, dates back to the early 16th century. All of these tombs served as religious gathering places for the members of tribes living nearby. These tombs as has been mentioned before, led to the construction of houses around them. The fact that these tombs are located in the best cultivated areas may help to illustrate this suggestion. Another important factor, though comparatively recent, was the settlement of many hundreds of Kologlis by the Turks. The oldest Kologli houses are found in the area of the present tribe of Ozza and date back to the 17th century. A third factor was the concentration of a few Jewish families in el-Hara which lies next to Sidi el-Beshet. (see plate IX)

Local theories - recorded history is absolutely lacking - are that the foundation of old Zavia - el-Hara was due to the tomb of this Marabout. The location of el-Hara - the Jews quarter - in the centre of Zavia oasis gave her the opportunity of being the first semi-nucleated type of settlement due to the fact that it was the only place for trade and marketing local products.

After the Turkish rule, el-Hara was more important commercially than anywhere else in Zavia oasis, but then the Turkish decision to make the present centre of Zavia el-Suk their main centre for administration restricted the growth of el-Hara considerably. The growth of el-Hara, in my opinion, was very slow and insignificant until a few decades ago. This suggestion is based upon the fact that commerce and artisan crafts, which are the main factors of her growth, were totally in Jewish hands. According to Agostini the Jews in el-Hara numbered only 517 persons by the year 1917. Consulting local authorities showed that at the time there were no more than 30 shops and a few houses located around a small open market. The peace provided by the Italians was a major factor in encouraging Jews to migrate from Tripoli to Zavia. The construction of the railway in 1922 and the completion of the Tripoli-Tunis road in 1927 have facilitated the trade with Tripoli and made it much safer. By the late 1930s, the Jews of el-Hara had built their synagogue. All these facts have greatly accelerated the growth of el-Hara until 1950 when the Jews for security reasons left for Tripoli and Israel. At that time there were more than 200 Jewish shops and over 100 houses, but since then the growth of this place has come to a standstill.

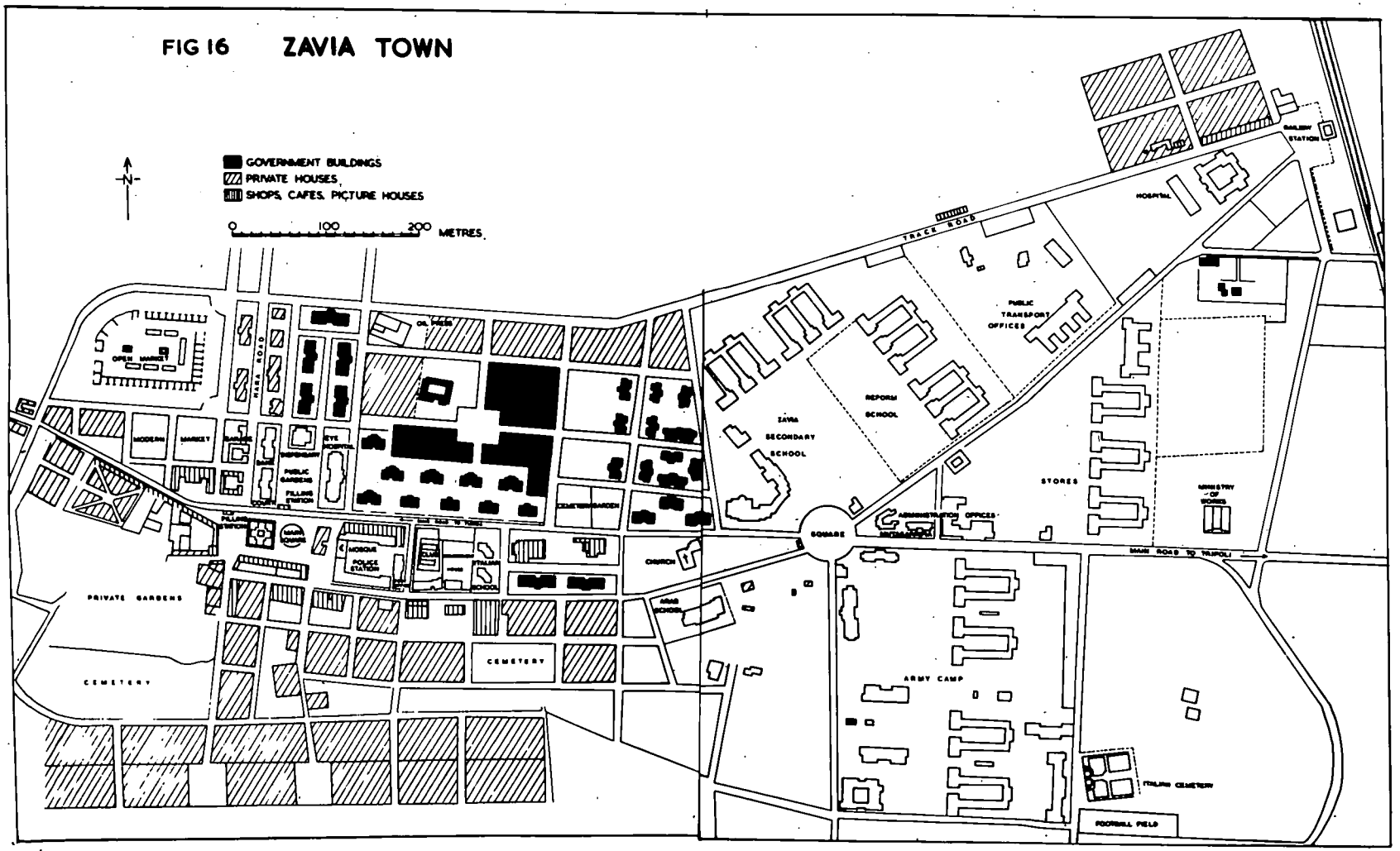
At present el-Hara, which has been occupied by native merchants with their families, is a shopping centre especially for foodstuffs, besides being locally

a famous place for handicrafts, timber, agricultural tools, blacksmithing and flour mills. The houses are of oriental type of one storey and they are generally built of stone. The Hara houses and the nearby villages have piped water system and supplied with electricity.

About 800 metres to the south of el-Hara lies the Suk or market. This Suk was and still is the administrative centre of Zavia. It was originally built in a square shape with the Turkish police station, the oldest building, along the east side. This building was greatly modified by the Italians who made a modern police headquarters of it. About 25 shops of Turkish origin lie on the south side of the square. On the north side were the old el-Kaimmakamia and school, now replaced by shops, and on the west a slaughter house has been similarly transformed. The centre, whish is a small garden with a well for drinking purposes, is used twice a week as a market place. Until 1930 the Suk was of minor importance so far as trade and commerce were concerned. The real development of the Suk to an urban centre only began in 1927 when the modern road between Tripoli and Tunis was finished. The road cuts the Suk into two sections, north and south. On the other hand the railway added little to the growth of the Suk as compared with the modern road, mainly because the railway station lies about one kilometre east of this centre. (see fig. 16)

The Italian scheme for developing the Suk was based upon acquiring practically the whole area between the Suk and the railway station. This task started as early as 1927. The idea was to erect three separate military camps on both sides of the road with a central headquarters and of course to build houses for the army personnel. These camps, of which two have been recently

FIG 16 ZAVIA TOWN



developed as public buildings, were occupied by the British Army for about 4 years after the second World War. At present Zavia secondary school occupies the biggest of these camps. The second in size is still used by the Libyan Army while the third has been transferred to the main administrative offices. Also the houses, which were originally built to accommodate the army officers, are now occupied by local government employees, Egyptian teachers and some Italians. There are about 70 of these houses, all with one storey and four rooms, of which one is designed as a sitting room, besides one big balcony. Each plot has two houses and its own garden. These houses are not exposed to the weather as the natives ones and all of them are supplied with electricity and piped water system. (see plate X). Private Italian houses were also built on this new developed area though few in number. Other public buildings erected on this area include a two storey elementary school for both Italians and natives, a post office, a recreational club, and a former savings bank. Around the railway station the Italians also built military buildings of which one has been transformed in 1944 to Zavia General Hospital. Changes on the northern side of the old suk were less marked than those on the eastern part. A few gardens were acquired on which some military buildings were founded. These buildings have now been transferred to public services; the present eye hospital (see plate VII) the court, the dispensary and the bank are all in this part. The rest have been transformed into government houses occupied largely by Italian citizens. Immediately west of this part of the Suk lies the road between the Suk and el-Hara. Along this road a few native private houses are found on both sides. Also at half way the general water

reservoir of both the Suk and el-Hara is to be found (see plate XI).
The Italians, after building the new preliminary school south-east of the Suk, have changed the former Turkish school to a municipality, which now has been also changed into shops. West and next to the former municipality a small modern market was built. Behind this modern market, which was mainly for selling vegetables, meat and fish, the main market was founded. It is a big yard divided into sections for selling different commodities; such as cereals, vegetables, cattle and sheep, clothes etc. This general market is held twice a week and it affects the whole population of Zavia oasis including Judaim and el-Harscia, Sorman in the west and as far as Zanzur in the east and Bianchi in the south. It is the third biggest market in Tripolitania after Tripoli and Suk el-Jiuma.

Changes on the southern and western parts of the old Suk are less marked in their extent as compared with those of the other two parts. They are confined to the building of a picture house on the southern part and a considerable increase of shops in the western part especially along the main road as far as the village of el-Rumha.

From this brief description we realize that the growth of Zavia town or the Suk is practically due to the changes brought about by the Italians. Indeed Zavia town has been enlarged at least three times in size since the Italian developments. (see plate XII).

Today, apart from general public buildings mentioned before, Zavia town has 10 public houses all of them run by Italians, 3 flour mills, 2 bakeries, two filling stations, two garages, one restaurant and one motoring school. There are about 200 shops, because of the communication facilities with Tripoli no general stores are to be found except one for alcoholic drinks and one for cigarettes.

Apart from the Suk and el-Hara settlement in the rest of Zavia oasis is of a dispersed permanent pattern. In every tribe there is a partial concentration of people usually around the mosque. This pattern of settlement is generally composed of one street with a few houses on both sides not necessarily with shops unless the tribe is far from el-Hara or the Suk. Around this vestigial centre lie the gardens belonging to the members of the tribe. Some of these gardens have houses, usually built of dry clay with three to four rooms on the average (see plate XIII). These houses which are similar to those around the mosque are of an oriental pattern. The 'hoosh' - house - is a square uncovered court-yard into which open the rooms. (see plate XIV). There is a well in the court except in the scattered garden houses where the farm well is used for domestic water purposes too. In some other houses the well is located in a separate section near the kitchen. In the houses of the high income group there is usually also a cistern for collecting the rain water which is used for both drinking and washing purposes. The hoosh has normally a flat roof of dried palm-trees. It is very rare to find two storey houses. On some of the gardens where no houses are to be found, the dwellings are then replaced by the "Zariba" which is usually made from palm leaves or Jerid. (see plate XV). Some of the people own a house in the street in which they live during the rainy season from October until March, and live in the Zariba for the rest of the year.

Tents are not often used in the gardens; they are used only by Zavia people who go with their families to the Jefara during the harvest season. On the other hand the use of the tent in Zavia is rather common during the Autumn. These tents are used by the semi-nomads of the Jefara who come for harvesting dates.

Beside the former types of dwellings we find that a very few caves are also used for dwelling purposes. Places where such caves are found are restricted to the southern coastal ridges. However, this type of dwelling is very limited indeed and therefore it may well be excluded.

Classification of Zavia population between those who live in houses and Zaraib (sing. Zariba) is not definitely known. Consultation with the Mudir of Zavia and other reliable sources suggest that the ratio is at 70 to 80% for house dwellers and at 30 to 20% for Zariba dwellers.

Discussion of population growth is limited by the absence of reliable estimates before 1917. According to Agostini's figures of 1917 the population was 20,646. In the census of 1931 the figure reached 25,400 and in the census of 1936 the population was 29,414. The figure of 1954 census was officially given as 35,043 and by 1957 the population was 35,362 according to figures obtained from Zavia Municipality. Figures of the population estimates of 1917 and 1957 by the different tribes were given in the chapter dealing with the tribal structure.

Before we end this study of Zavia it is worth discussing the following two points, its function and its future. The main function of Zavia town is mainly restricted to administration due to the fact that it is the capital of Zavia district, which includes the following centres, Zanzur, Sorman, Sabratha and Agelat. It also contains the police headquarters for the whole western district. Moreover Zavia town serves the whole western district in the fields of secondary education and health.

As far as industry is concerned Zavia and the whole western district have very little to offer. The main industries are restricted to olive oil. It is

beyond any doubt that Zavia's economy is largely built upon its agricultural products whether of natives or Italian settlers. These products will be studied in detail in the chapter dealing with the economy. The marketing of these agricultural products and livestock is also important and that is why Zavia market is of special interest.

These simple functions lead us to believe that the future of the place will be more linked with agricultural expansion than anything else. This expansion can be done in two ways. The first is by increasing the present productive capacity of all the farmers. This is possible by spreading agricultural education especially among native farmers and also by giving more credits and facilities to the Italians. The second way is by increasing the cultivated area, especially in the case of irrigated crops. This can be done by enlarging the present oasis especially to the south. The southern lands have practically similar rainfall and underground water supplies as in the areas of Bianchi and Giordani which have been successfully developed by the Italians. This land development will serve in reducing the density of population in Zavia as well as increasing the agricultural output. It will also eventually help in settling the Jefaran semi-nomads.

ZUARA D.E.L. Haynes mentions the name of Casas (Zuara) as a Roman station without giving any details.(2) However, whether this was true or not, we cannot trace a fixed date for the first foundation of Zuara. Dr. Benguinote on one hand gives the following story.(3) He says it is believed that a daughter of an unknown prince who lived at Mereccan, a few kms. west of Mellita, fell in love with one of her father's negro guardians and as she could not marry him they eloped to the present location of Zuara. There they settled down

and had their first two children Attuse and Aissa. These two brothers were the first to form the Berber group of Zuara during the first half of the fourteenth century A.D. On the other hand the following story was given by Captain Pesenti(4). He believed that there were two friends, Said and Califa, who decided to travel westward of Tripoli. On their journey and just before they got to the present location of Zuara they saw a tiny village so they decided to visit it. They remained there for a while but soon afterwards Califa decided to continue his journey while his friend preferred to stay permanently. Califa's decision to depart annoyed his friend and so he said to Califa "Zuart Ahlia" which means in the Berber language "you have deceived me". Since this event, which took place at the beginning of the fifteenth century, the place became known as Zuara.

Personally I believe that the foundation of the place dates back to the 6th century A.D. if not before. This opinion is based on the fact that the first Arab conquest of the 7th century did not succeed to Arabize the Berbers of Zuara. Moreover, even the arrival in the 11th century of both Beni Hilal and Beni Suleim, who were responsible for the Arabization of nearly all the Berbers of Tripolitania, did not change the situation. This undefeatable racial character must have been strong enough to oppose the severeness of the Arab invaders. In other words I believe that Zuara was an urban centre strongly fortified by the vast areas of sebkas nearby. This belief leads us to think that Zuara may have been a Roman station gradually transformed to a Berber small town perhaps since the end of the 4th century when the Roman dignity began to decline. Only archaeological investigation can prove this hypothesis.

The growth of the place under Arab rule was insignificant due to its unfavourable economic position. Conditions remained the same under the Turks.

Before 1909 Zuara belonged administratively to Zavia. In that year it became a Caza or district. After the Italian occupation Zuara became very important mainly for military purposes due to its geographical position near the Tunisian frontier. It was quite clear that the Italians were interested in occupying Tunisia. The following quotation by P. Newman may explain this desire. "The demand for Tunisia is no idle cry. The dream of Mare Nostrum will long persist, Mussolini is not colonizing Libya merely to aid his landless peasants, any more than he is fighting on the side of Franco to give his troops experience of modern warfare.(5) (see fig. 17, air photographs)

However, the Italian start for developing Zuara took a different line from what they did in Zavia. They did not go into the centre of Zuara and develop it. They left the Arab town practically as it was and devoted their efforts to building a new Zuara. The choice of the new place, which became known as Zuara Marina, was due to its rocky nature though only for a few hundred metres. However, despite the unfavourable character of this part of the shore the Italians began as early as 1920 to construct Zuara's artificial harbour, which was completed in 1929. The construction of this harbour gave Zuara the importance of being the second sea port along the whole Tripolitanian coast. Also it gave her shores an eminent position as far as sponge and fish catches were concerned. Another different line in the development of this area was that no concentrated military camps were built. The idea was to erect general military stores surrounded by numerous separate houses to accommodate the navy service men. Shops and public houses were also built all over this area. In other words Zuara Marina was a military area completely restricted to Italians. Because of this military function Zuara Marina was heavily bombarded by the

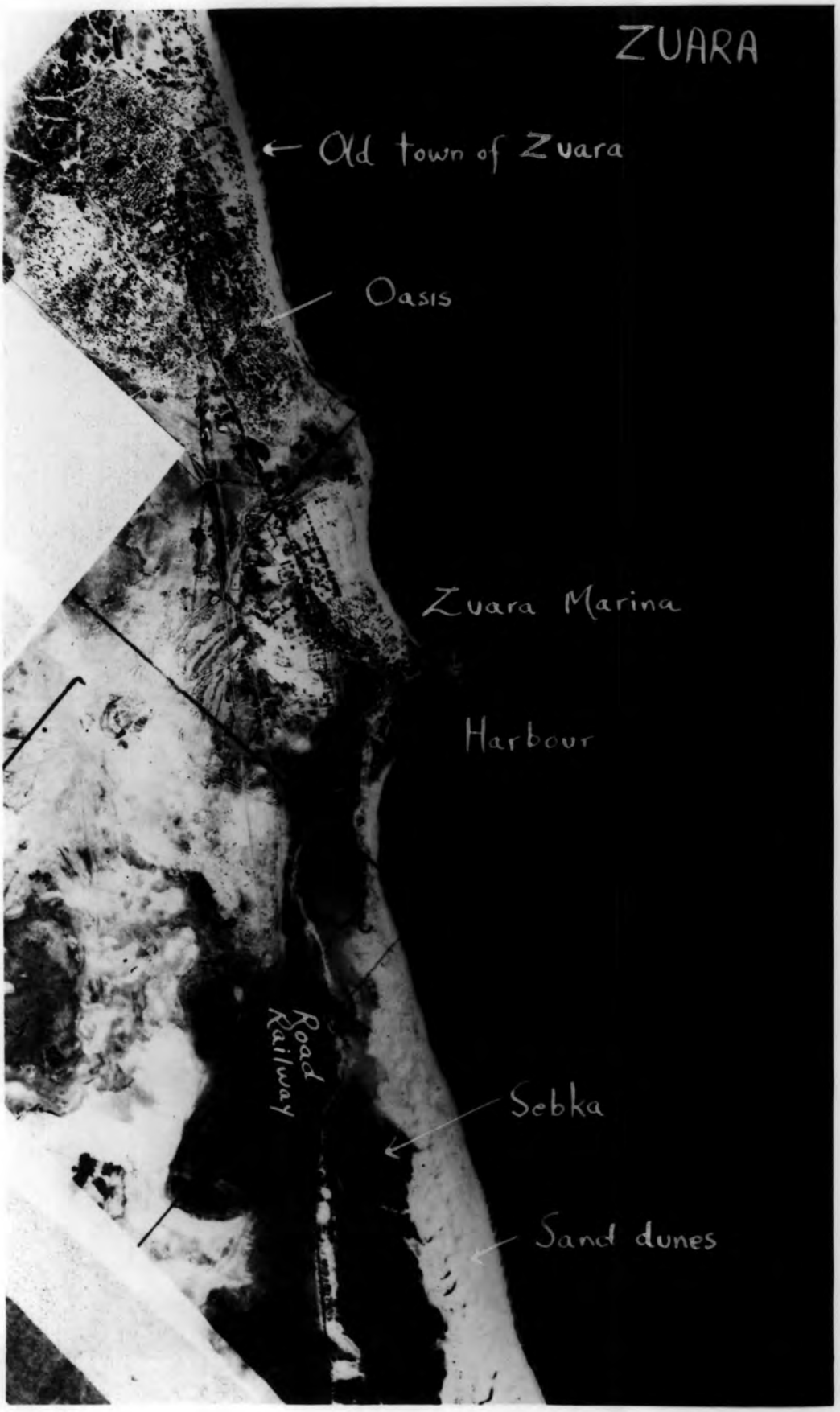

ZUARA
← Old town of Zuara
Oasis
Zuara Marina
Harbour
Road
Railway
Sebka
Sand dunes

Figure 17

R.A.F. during the World War II, which left her completely ruined. The destruction, which still is the main feature of the area, also affected the artificially constructed wall of the harbour and consequently the harbour is now practically out of use due to the increased amounts of sea sand and weeds, which stand as an obstacle against beaching even the small sponge and fish boats. The damage to this harbour should be repaired as soon as possible, because both sponge and fish present an important source of income to Zuara.

In the very few houses which remained undamaged near the harbour, live some of Zuara's fishing families. In 1957 one of the big stores was rebuilt and made a factory for Zuara catchment of Tuna. Along the road between Zuara Marina and the old town a few private gardens and houses are to be found. Immediately east of old Zuara and on the same road we find the biggest modern building in the whole area. It was the residential place for the Italian governors and it is now similarly occupied by the Mutasarrif. Also we find the railway station with two water reservoirs nearby, the electric power station, the preliminary school and a modern market. These public buildings are on the southern side of the road. On the northern side we find the municipality, the dispensary and a filling station. The foundation of all these buildings was in 1925 and they are now considered as a modern part of the old town. Old Zuara is cut into two sectors by the main road to Tunisia (see fig. 18). Along this road the main shops are found. Generally speaking, these shops are connected to the owners' houses and most of them due to comparatively limited communications with Tripoli are more or less big stores. The centre of the town is a roundish square which used to be a public market before the Italians built the modern one. Shops and cafes of pre-Italian origin surround this square except on the northern side where the

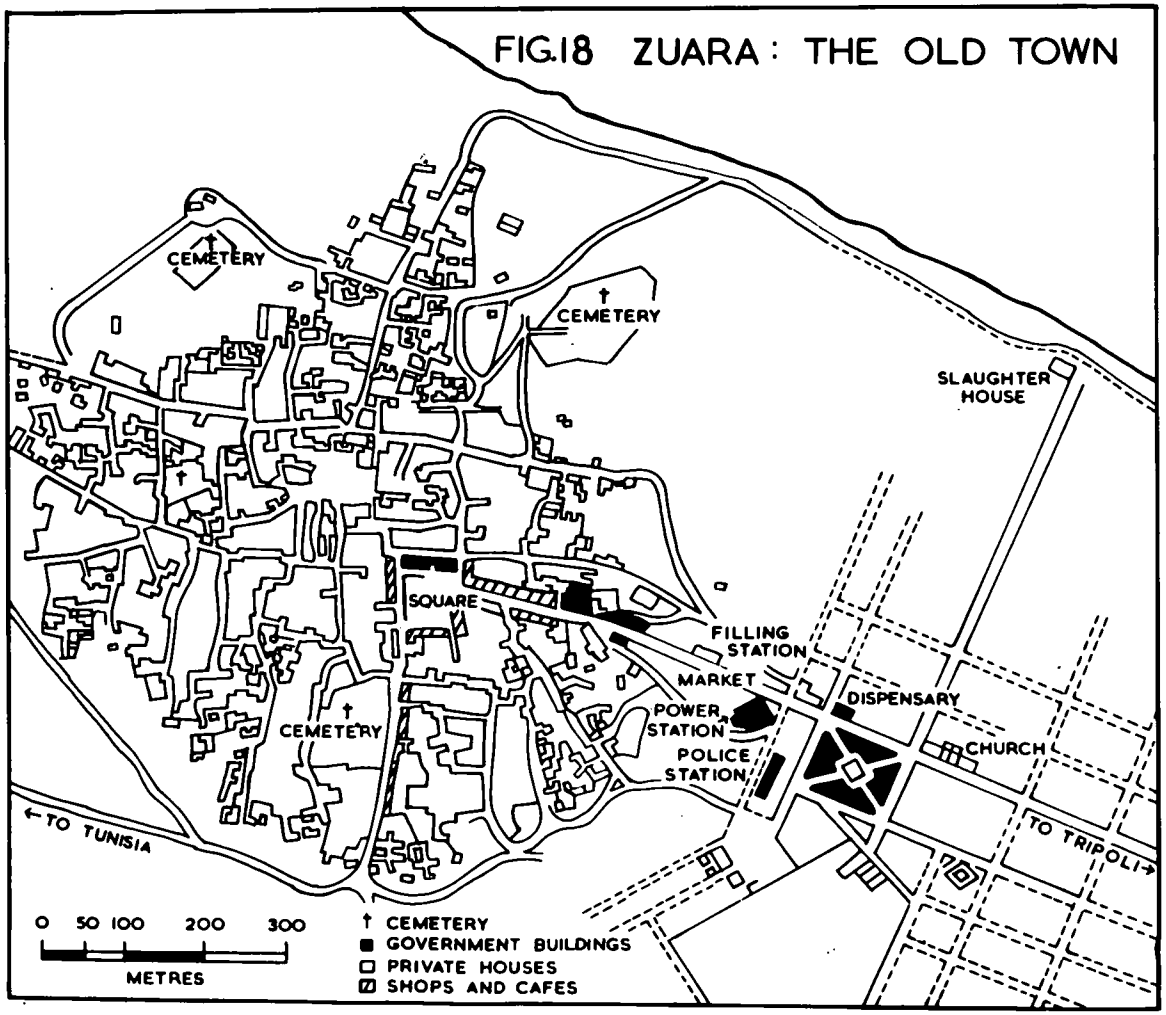


FIG.18 ZUARA : THE OLD TOWN
CEMETERY
CEMETERY
SLAUGHTER HOUSE
SQUARE
FILLING STATION
MARKET
DISPENSARY
POWER STATION
CHURCH
POLICE STATION
CEMETERY
← TO TUNISIA
TO TRIPOLI →
0 50 100 200 300
METRES
CEMETERY
GOVERNMENT BUILDINGS
PRIVATE HOUSES
SHOPS AND CAFES

Italians built a two storey building for administrative purposes. From this square the streets of the old town radiate. (see plate XVI). Along these unplanned streets, which are usually of less than half a kilometre long, live Zuara's population. In many cases the members of one tribe occupy one or two adjacent streets. The native houses in Zuara are similar to those described before in Zavia except that the building materials are chalk and not clay or stone and the roofs are made from wood instead of dried palm trees. Wells are found in every house due to the shortage of fresh water supplies. Electricity although it is generated locally is only provided from 6 to 12 p.m. and it affects practically all the shops and houses of the town.

The difference between Zuara Marina and the old town is very noticeable especially in the case of the building materials. Construction is of stone and cement and the buildings are generally of two storeys in Zuara Marina. In the old town, on the other hand, the general feature is of one storey and construction is mainly of chalk.

As far as population concentration is concerned we find that Zuara Marina is not of any importance due to its damage and the repatriation of the Italian army. Foreigners who still live in Zuara are few, and they, together with the native population, are concentrated in the old town. Unlike Zavia, where the population is scattered all over the oasis forming different tribes, the people of Zuara are entirely restricted to the town area itself and the intermingling of tribes is more noticeable than anywhere else in the whole of the western coastal region. They all live in houses, the only type of dwelling here.

According to Agostini's estimate of 1917 the population of Zuara was 4,366 and by 1954 it was 6,778. On the other hand figures obtained from the town municipality in 1957 showed that the population was 10,445.

The severe damage of Zuara Marina and the reduction in fish and sponge catches, together with the cessation of the contraband trade with Tunisia which flourished during the war years, have reduced the town's prosperity. Many inhabitants migrated to Tripoli City especially the wealthy merchants and their families. Trade, which was the main function of Zuara, is declining rapidly. Nowadays, although tradeis still important locally with the interior tribes of Regdalin and el-Assa, Zuara has lost her position as an important trade centre with Tunisia. The great reduction of these two sources of income meant that Zuara became no more than an administrative centre for Zuara district. Taking into consideration the insignificant agricultural productivity of the whole district we come to realize the grave future facing this urban centre. Reviving the lost prosperity needs that the following two steps should urgently be carried out; (a) repairing the harbour damage and encouraging both fish and sponge trade; (b) providing more fresh water resources. Moreover, tourist publicity can make Zuara a first class holiday resort, due to its magnificant sandy beaches. Also, the road between Zuara and the Jebel should be macadamized to facilitate communication and trade.

SMALL TOWNS

Local definitions based on administrative functions classify the town as a centre where the Mutasarrif is stationed. On the other hand a small town is a centre where the Mudir and not the Mutasarrif is to be found. This also means that in a town we find both the Mutasarrif and the Mudir. According to this definition we find the following small towns from east to west: Zanzur, el-Mamura, Sorman, Sabratha, Agelat, Regdalin and el-Assa. From these centres, which are of a rural character, we find that el-Mamura, el-Hascian, Regdalin

and el-Assa are in fact very small centres of only a few hundred people.

ZANZUR It is likely that the name of Zanzur was derived from one of Madghis sub-tribes which lived in the area before the Arab conquest. The first mention of Zanzur was given by el-Tigiani, the Tunisian historian (1307 - 1309) However it is still doubtful whether he meant there was a centre or village known as Zanzur or whether the name was given to the whole area.

Under Ottoman rule Zanzur with Ursheffana tribes to the south formed a Nahia, a small district ruled directly from Tripoli.

The oldest building found today in the centre of Zanzur is of Turkish origin and dates back probably to the end of the 18th century. This building which was and still is a police station, is the seed of the growth of the suk. For security reasons a few shops were built nearby and they remained a handful until the Italian occupation. However, the development of the Suk to its present shape was due to the Italian efforts, though it was less in extent than in both Zavia and Zuara. The nearness of Tripoli city and the situation of the Suk south of both the main road and the railway are the reasons which may explain the limit of such development. After 1923 the Italians began to acquire lands for their agricultural scheme. Thus the foundation of many concessions in the area together with the provision of accommodation for their administrative personnel were the reasons behind Zanzur's development. The Italians started by building a centre for administrative purposes next to the Turkish police station and building an open maket facing them from the west. Shops were also built on both sides, north and south, of the present ill-shaped square. Halfway along the road which leads to the Suk from the main road and the railway station, the Italians erected in the late 1920s a fort which has been now transformed into a public school. On both sides of this road between the fort and the Suk the Italians also built about 30 houses for their

employees. Immediately before the Suk we find the mosque on the northern side of the road and about 10 shops of Turkish origin on the southern side.

Apart from the Suk where only a few hundred people mainly government employees, are to be found, settlement in Zanzur area is of a dispersed pattern. A partial concentration of population is usually found around the mosques in every tribe. The population of the area, which also includes the minor oases of Saiad, el-Maia, el-Hascian and el-Mamura, is split equally between those who live in houses and those who live in Zariba.

Zanzur, besides being an administrative centre for both Zanzur and the minor oases, is also an important agricultural area. Its market, which is held twice a week is of special importance in this field, though its effect is rather limited to the local population.

The growth of the population of the area from 1917 until 1957 is as follows:-

Year	Population
1917	10,473
1954	22,750
1957	24,885

After we leave Zanzur along the main road to the west we come across two of Zanzur's minor oases. The first is Said, on the rocky shore of Said and only a few hundred metres north of the main road. Apart from a huge fort built by the Italians for military purposes, there are a hnadful of shops serving the nearby gardens. A few kms. westward we reach el-Maia. It is a community of about 10 Arab houses on both sides of the road. Shops are usually connected to some of these houses.

The other two important oases of Zanzur are el-Tuebia and el-Mamura.

The first consists of a few gardens with some shops around a small mosque. The second, which the Italians intended to make into an Arab agricultural village, is now completed by the Libyan government. It has 120 farms each with a small house. At the extreme west of this village we find its Suk. This Suk has been built by the Italians and it has a square shape. A huge mosque and the administrative offices at the north end, the police station and the post office at the west, shops in the east while the southern side is open. There is no weekly market due to the nearness of Zanzur in the east and Bianchi in the south. These two oases are located inland a few kms. south of the main road.

The last of Zanzur's oases is el-Hascian which is a semi-Italian settlement constituted of about 20 demographic farms. The oasis has a store with a public house connected to it.

Half way between el-Maia and Zavia town we find the Italian settlement of Oliveti - Judaim. The study of this village and also the pattern of the Italian farm houses will be given at the end of this chapter.

Half way between Zavia town and Sorman there are two small oases. El-Harcia is a few kms. north of the main road. It comprises a few gardens and at its approximate centre we find a few shops and a dispensary near the main mosque. On the southern side of the main road and about one kilometre west of el-Harcia is the Bu Isa oasis. It is also a small unit of gardens with about a dozen shops around its small mosque.

After a few kms. westward we come to the small town of Sorman. The Suk of Sorman is a few hundred metres south of the main road. Old people of the area say that the Suk is only about 80 years old. At the time there was a big open yard with a shop in it to accommodate travellers between Zuara and Tripoli.

The Turks took over this place and changed it into a police station, and from that time a few shops were built near it. The number of those shops remained practically unchanged until the Italians took over the country. It was 1926 when the Italians began to acquire a few gardens surrounding the former Turkish police station and started to make a modern Suk of it. This Suk is of a square shape; on its northern side there are about 15 shops replacing the old Turkish police station. On the eastern side the Italians built two storey building for administration and a towery mosque. On the southern side there is a two storey building, the upper part of which was used for accommodating Italian personnel and the lower part for shops. The western side, which is a huge open court, has been made into a market. The centre of the Suk was formed into a handsome public garden. On both sides of the road which connects the Suk with the main road more shops were built, as well as two modern buildings used now as female and male schools. Immediately on the northern side of the main road and facing both schools the Italians built a new police station which is still used for this purpose.

As elsewhere in Tripolitania studies of population growth are restricted to the year 1917 onward. Agostini in 1917 gave a total of 10,500. Figures of 1954 and 1957 are 18,200 and 19,260 respectively. According to the Mudir's information the people are roughly classified at the ratio of 40% for house dwellers and at 60% for Zariba and tent dwellers.

The Suk of Sorman besides being an administrative centre is also an important market especially for cereals and animals. The effect of this market, which is held twice a week, involves Zavia in the east, Agelat and Sabratha in the west. Agriculture and pastoralism are the main functions of the area.

The hope for any future development thereforeis reliant on agricultural expansion especially southward of the oasis.

SABRATHA The foundation of modern Sabratha was completely due to the Italians. The start took place in 1922 with the arrival of the railway. As in both Zavia and Zuara the Italians intended to make from the place a big military installation. Moreover the area was the first to see land acquisition for agricultural development in the whole western district. The spot chosen for new Sabratha is about one kilometre south of Roman Sabratha. To start with the Italians began to build a huge military camp on the eastern side of the present main road. This camp is estimated to accommodate 4,000 men. 40 houses similar to those described in Zavia were also in construction at the same time outside the camp and mainly on both sides of the road to ancient Sabratha. Other public buildings near the camp are a two storey building for administration (see plate XVII) a mosque, a church and a post office. On the western side of the main road which lies between the railway station from the west (see plate XVIII)and the main road from the east we find a big market (see plate XIX) and school, two restaurants, three public houses, a filling station, a flour mill and about 30 shops. Sabratha at present is the residential place for the Kaimmakam of both Agelat and Sabratha. Its twice a week market affects Agelat in the west and Sorman in the east.. The agricultural significance of the area is supplemented by its Tuna industry at Marsa el-Madina. It is also a tourist resort, due to the existence of the famous Roman antiquities at old Sabratha. (see plate XX) The future of the area therefore depends on improving and enlarging the present Tuna industry and also on making more tourist publicity.

The growth of the population of the mudiriah, who are scattered all over

the oasis, is as follows:-

Year	Population
1917	9,800
1957	16,100

The dominant types of dwelling in the region are either the Zariba in the summer and the tent in winter, or permanent houses. The ratio between the two types is 70% to 30%.

AGELAT Eight kms. west of Sabratha along the main road and four kms. south we find the small town of Agelat. The foundation of this centre dates back to the 16th century. The date was the arrival of the famous Saint known as Sidi Abu Agela from el-Magreb. It is obvious that the name of Agelat is derived from this Saint. During the Turkish rule Agelat was the residential place for the Kaimmakam of both Sabratha and Agelat and which the Italians lately transferred to Sabratha. At present the centre or the Suk of Agelat is a unit of one street. The former Turkish Kaimmakamia, the police station and the mosque are on the northern side together with a few shops. On the southern side about 30 shops of which half are of Turkish origin.

The Italians made no developments here due to its situation inland. After World War II a new school was built a few hundred metres north of the Suk. Two years ago and for the first time an electric power station was built near the northern side of the police station.

The importance of Agelat is restricted to its agricultural products, mainly cereals, and also to animal husbandry. As in both Zavia and Sorman, the future of the area relies on increasing the cultivated area and improving on the present system of animal husbandry. The following table shows the growth of the population of the area since 1917.

Year	Population
1917	14,200
1954	17,450
1957	18,600

According to the Mudir's information the classification of the population according to forms of dwelling is at the ratio of 20 to 30% for house dwellers and 80 to 70% for a combination of the Zariba and the tent.

From Agelat to the Tunisian frontier, apart from the town of Zuara, settlement is of a dispersed mobile pattern in its widest scope. Pastoralism replaces agriculture in importance. The difference in the character of economy of this area and the one east of Agelat to Tripoli is due to their different physical characteristics, which already have been described.

Oases found in this area besides being few and scattered are also of minor importance because of their limited fresh water resources. These oases, which will be described separately, have no importance as far as population concentration is concerned. Economically speaking, the main function of most of these oases is restricted to marketing animals and cereals. Shops found in these oases are mainly engaged in selling tea and sugar, olive oil, paraffin for light, and tobacco.

Because of the nature of the bedouin life we find that the most dominant form of dwelling is the tent. The fact that the population of this area are semi-nomads of mixed economy means that they may combine both tent and zariba. The latter applies particularly to the semi-nomads who own palm-trees in the oases. A tent is generally 6-8 metres long and 4-6 metres broad. The tent cloth is, in most cases, made of goats hair to which other secondary materials

are added. The Zariba on the other hand is usually made from branches of palm-leaves or jerid. Mud houses are often found near the centres of the oases but broadly speaking houses are very rare and only in possession of the wealthy people. Public buildings are also confined to small offices, police stations, mosques and schools. Information based upon personal observations and consultations with reliable authorities lead to a classification of the population of the area at the ratio of 80 to 90% for both tent and Zariba dwellers and at 10 to 20% for house dwellers. There are five oases: Regdalin, el-Gmeil, Zelton, Bu Chemmasc - Pisida and el-Assa. Regdalin is about 12 kms. south west of Zuara. It consists of about 30 shops and a similar number of native houses around a small mosque, a police station and the Mudir's office. The oasis has a weekly market. El-Gmeil lies at a similar distance south of Zuara. There are about 20 houses, 25 shops, a mosque and a small police station. The Suk is an open court. The importance of this Suk, which is also held once a week, is now greater than that of Zuara itself due to the quarrels between the Berbers of Zuara and the Arabs of the interior. Marketing is mainly in animals and cereals and its effect goes as far as Zavia in the east and el- Assa in the far south west. Zelten is a very small oasis about 25 kms. west of Zuara on the main road to Tunisia. Houses and shops are fewer in number than in both former oases. Bu Chemmasc-Pisida is a former Roman village 40 kms. west of Zuara. The place is now a fishing village of about 15 houses and 10 shops. Besides, the village is now an important Customs station between Tunisia and Zuara. It also has a police station and a mosque. El-Assa is the administrative centre for the Arab Nuail tribes. It lies about 36 kms. south west of Zuara, and comprises the Mudir's administrative building

a police station, a mosque, a school, about 20 shops and about 30 houses. The place, due to its nearness to the Tunisian frontier, was and still is important in smuggling. The population of this Mudiriah are typical semi-nomads and therefore the raising of livestock is their main source of living, and that is why the weekly market in here is of a special importance.

The construction of both the Tripoli-Zuara railway in 1922 and the coastal road in 1927 has played an essential part in developing the western coastal belt not only from the settlement point of view but also as far as the present economy is concerned.

The communications between the different centres of this region and the city of Tripoli are carried out by both the road and the railway. On the other hand communications with Tunisia are only available by road as the single track railway line finishes at Zuara. The fact that the road between Tripoli and Tunisia connects the urban areas made it the more important means of communication and that is why most of the exports of the area mainly agricultural products are sent to Tripoli by road. It is also important as far as the number of passengers is concerned except perhaps on market days. The railway line, however, does not connect urban areas so efficiently, as it was originally constructed for military purposes by the Italians.

Other means of communication are represented by a subsidiary road to Bianchi via el-Maia and other via Oliveti, a road to the Jebel via Zavia and also a track from Zuara via el-Giosc. This last track should be macadamised as soon as possible to facilitate trade and communications between Zuara district and the western part of the Jebel. However on the whole this region has more efficient communications than any other part of the country.

We end the study of the settlements of the western coastal zone by studying both patterns of Italian settlement in this region.

(a) ITALIAN VILLAGES Only one of these villages is to be found in our western coastal belt. It is the settlement of Oliveti - olive yard - the name of which has been changed recently to Judaim. This settlement is only seven kms. east of Zavia town. Before the Italian government had made from the area a demographic village in 1938, it was a private concession to its owner A. Chiavolini since 1923. The failure to encourage mass Italian migration to Tripolitania under the system of private concessions made the Fascist government take more positive steps by taking over the slowly progressing concessions and by devoting their future agricultural developments to the new system of demographic farms. As a result of this new method the I.N.F.P.S. began in 1938 to construct the village of Oliveti and at the same time work was going on to establish a total of 122 family farms in the area.

The village of Oliveti is of a three sided square shape. A dignified church and a few houses occur at the northern end. More houses, a school, a picture house, a post office and a public house are on the west. A dispensary, a public meeting hall now changed into a theatre and more houses are at the east. The southern side is open. The centre of this village is now a handsome garden. From this description we realize that this village has only a small population. The ten houses of the village were built to accommodate families or individuals who work there such as the doctor and nurses, teachers and shopkeepers.

(b) ITALIAN FARM HOUSES This type of settlement although dispersed is more important because the Italians have acquired about 28,000 hectares of lands in the western coastal region alone. Most of these lands have been made into concessions or demographic farms. The distribution and number of both farms

have been given in detail in the chapter on Italian colonization. The number of families living on a concession differs from one to another. On the other hand only one family lives on a demographic farm. Generally speaking, the houses on demographic farms are based on the old Roman design. Each has three rooms; the one in the centre a living room, the two side ones bedrooms. A stable adjoins each house. Construction is of stone and cement. (see plate XXI). A concession house is more spacious. The average number of rooms varies between 4 to 6 usually with balconies and gardens around. The stables are much bigger and separately built. The roofs of both houses are flat in most cases. Besides these farm houses we also find on both types of farms another pattern of dwelling. It is the Zariba where the native labourers and their families live.

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(2) D.E.L. Haynes. The Antiquities of Tripolitania. Tripoli 1955, p.136.

(3) Notizie Sul Caza di Zuara, Tripoli 1914, pp.I,II.

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(5) E.W.P. Newman. The Italian in Libya. English Review, London 1934, p.448.

PART II

CHAPTER V

ITALIAN COLONIZATION

"Quarta Sponda" was the name given by the Italian government to distinguish its colonization in Libya which proceeded on the same lines as the colonization of the Pontine Marshes, south of Rome.(1)

Although Italy had been in Tripolitania since 1911 her colonization scheme, to develop the country agriculturally, did not start until 1923 owing to lack of security.

Judging the possibilities of success of this enterprise in a country like Tripolitania with an erratic rainfall, soils of low fertility and lack of stability there are many qualifications must be well considered: (1) Colonization can take place only where security is guaranteed; (2) Productivity of the land must be certain; (3) Ground water has to be abundant; (4) Colonized areas should benefit from the Mediterranean climate which dominates only the coastal zone; (5) These areas have to be near urban centres where marketing and communications are easy. On these bases the start took place in 1923, under Count Volpi, Governor of Tripolitania, in areas near Tripoli city and other coastal centres.

This agricultural colonization began on a plantation basis(2). The plan was that the government had to provide the capital, while labour had to be native. Thus great tracts of land were taken from its Arab owners who were either unfairly compensated or suffered confiscation as a result of the decree of April the 11th 1923 in which properties of all those regarded as nationalists were ordered to be confiscated.(3) Also in the decree of November the 15th

1923 expropriation was declared on all the uncultivated areas.(4)

Thus from 1923 areas of land taken over by the Italians started to increase rapidly as the following statistics indicate in hectares(5):-

Year	Area Acquired	Area Given to Concessions
1914-1922	9,313	3,612
1923	26,100	3,970
1924	27,100	9,949
1925	4,887	17,619
1926	35,124	25,596
1927	45,264	27,554
1928	14,722	13,465
1929	17,153	14,994
1930	20,376	5,322
Total	200,039	122,081

In 1939 the acquisition of new lands stopped because of the outbreak of the World War II. However during the 1930s the total area acquired for colonization purposes increased little to a total of 246,000 hectares in 1939.

The distribution of the total area, among the three Tripolitanian provinces in 1930 was as follows:(6)

Province	Area (in hectares)
Eastern	76,512
Central	94,827
Western	28,700
Total	200,039

In the case of the western province, where colonization is mainly restricted to the coastal region, the figure is distributed as follows[7] and areas are shown on (fig. 19).

Locality	Area (in hectares)
Zanzur	9,000
Zavia & Sorman	11,700
Sabratha	6,000
Mellita (Zuara)	2,000
	28,700

The colonization of the western province also known as the western district started early in 1923 when the first land near Sabratha was acquired. Around the oases of Zavia and Zanzur work started in the following year, while in Sorman area this task took place only in 1927. The acquisition of lands in this coastal region is shown on (fig. 20).

These lands were handed to development companies who were required to employ a certain number of Italian immigrants[8]. The number of concessions in Tripolitania reached a total of 623 of which 132 were to be found in our region. The distribution of the western coastal belt concession in 1959 by ownership is as tabulated below:-

Locality	Ownership		Total
	Italians	Arabs	
Zanzur	35	23	58
Zavia	18	10	28
Sorman	4	6	10
Sabratha	12	5	17
Zuara	8	11	19
Total	77	55	132

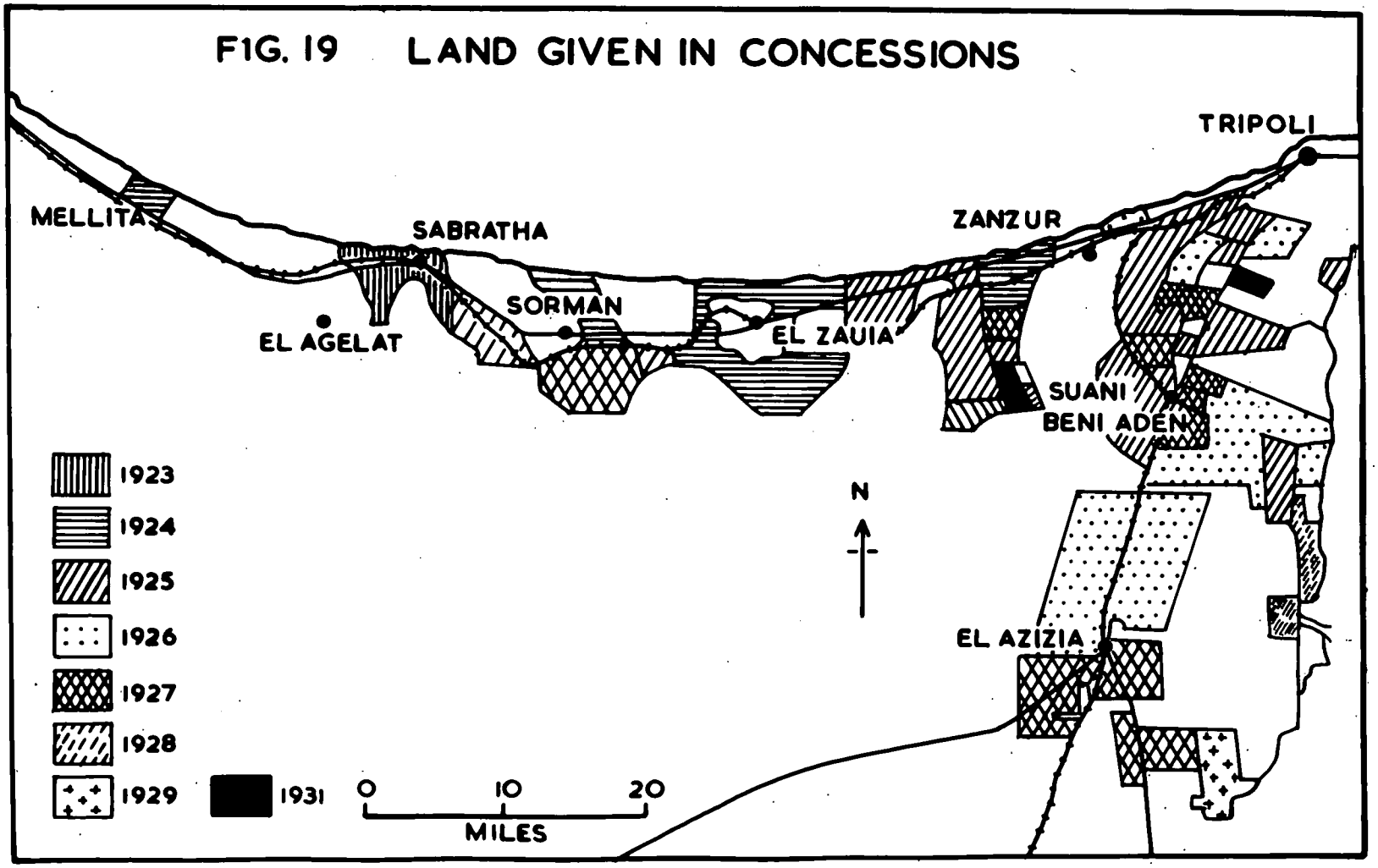


FIG. 19 LAND GIVEN IN CONCESSIONS
TRIPOLI
MELLITA
SABRATHA
ZANZUR
SORMAN
EL AGELAT
EL ZAUIA
SUANI BENI ADEM
N
EL AZIZIA
1923
1924
1925
1926
1927
1928
1929
1931
0 10 20
MILES

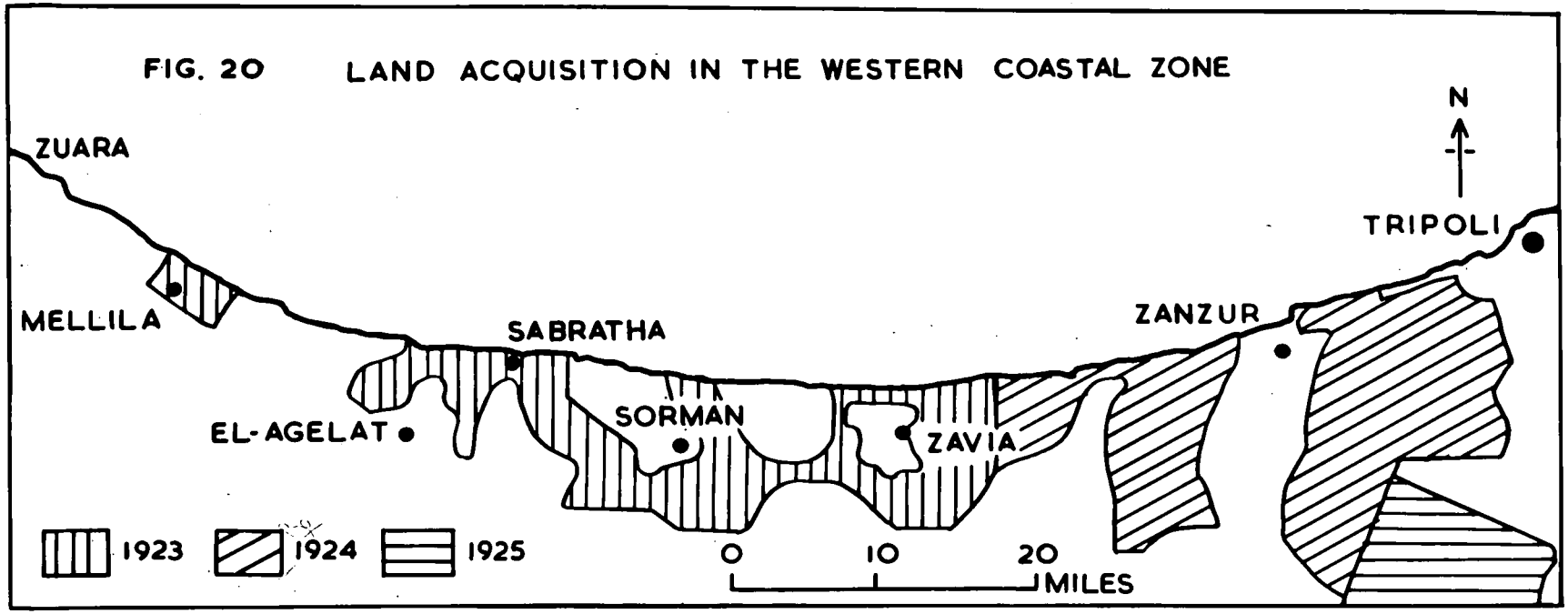


FIG. 20 LAND ACQUISITION IN THE WESTERN COASTAL ZONE
N
ZUARA
TRIPOLI
MELLILA
SABRATHA
ZANZUR
EL-AGELAT
SORMAN
ZAVIA
1923
1924
1925
0
10
20
MILES

The distribution of these concessions by minimum and maximum areas is as shown below:-

Locality	Minimum Area (hectares)	Maximum Area (hectares)
Zanzur	7	1,577
Zavia	47	912
Sorman	50	1,226
Sabratha	18	1,878
Zuara	16	414

The total area of these concessions gives an average area of about 212 hectares each while this average decreases to only 195 hectares as regards the whole of Tripolitania.

Beside the huge loans and credits given to these plantations they were also granted 25 years free of taxations. Results shown by these concessions were considerably successful as far as the agricultural production was concerned. But on the other hand they meant very little settling of Italian peasant families as the 1936 Census results indicated when only 15% of the Italians found in Tripolitania were engaged in agriculture. Therefore it was decided that fundamental changes should take place as soon as possible to encourage a great number of Italian immigrants, which was the reason behind this mass colonization scheme. Sir E.J. Russell gave a clear picture when he described the Fascist principles of their regime as follows: "Its purpose is social and political rather than purely economic: it aims at a mass redistribution of population and strengthening of political power and in consequence it is not to be judged by its financial returns".(9)

So the second step of this colonization was made in 1928 by Marshal E. De Bono. The new plan, which is described as direct or governmental

colonization, was based on experiments made by Luigi Razza who started an organization called Ente Di Colonizzazione per la Cirenaica to encourage mass colonization in that part of Libya and it started operating in 1923. The conception of this idea met with favour and encouragement, which resulted in extending the field of this organization to Tripolitania as well and it became known as Ente di Colonizzazione della Libia or just Ente.

Generally speaking the success gained by this organization was due to Marshal I. Balbo who had been appointed as general governor of Libya in 1933. The enthusiasm and efforts of this governor who was also granted wide powers and huge grants (D. 500 million Lira) gave the scheme its final shape especially after inviting the collaboration of a provident society known as L'Istituto Nazionale Fascista per la Previdenza Sociale (I.N.P.S) and also ordering a complete underground water survey, which resulted in discovering both semi-artesian and artesian water layers. However from 1928 the second colonization scheme began to take its name and purpose as demographic colonization on the basis that the family and not the individual constitutes the unit of settlement. Thus the construction of demographic settlements instead of privately owned estates began on a large scale in different parts of the country by both mentioned organizations. The idea was to divide the land of each settlement into farms varying in size from 15 to 30 hectares, each farm containing a house, equipment and livestock. Also on each settlement construction of the central buildings which include a church, school, post office, medical headquarters, administrative offices, store and public houses was going on at the same time.

Some of these settlements were already given as private concessions and later on they were taken for the demographic scheme as in the case of Oliveti

settlement which was a concession owned by A. Chiavolini[10]. In April 1938 I.N.P.S. took over the property and changed it into a demographic village.

However by October 1938 the first demographic settlers were brought in[11]. This event despite the short time when this regime was in operation showed the great efforts and determination of the Fascist government to make from Tripolitania her fourth shore.

Generally speaking, the enterprise was a tremendous task and something worthy of admiration, but whether it has been really economic and successful is also something deserves consideration which we will discuss later on.

Basically work on these settlements started with the government who had to build the roads, erect central buildings and of course acquire the land. After this was completed responsibilities lay entirely on the organization which had to develop the irrigation system, provide equipment, build and furnish the houses, clean the land provide seeds and fertilizers in addition to a fixed salary paid to farmers in their first agricultural year. The conditions between colonists and the organizations differed slightly from one to another, but generally they follow the following lines:-[12]

(1) The wage earning stage in the first five years. The organization had to provide all the farm necessities including seeds, manure, implements and the cropping policy and it obtained half the production in return.

(2) Full holders stage from the sixth agrarian year colonists became full holders of their farms and they had to provide all their necessities. Charges held against them were those for the interest on values of farm and stock.

(3) Stage of repayment from the 9th agrarian year colonists were required to

pay part of their debts which have to be completed in 27 years after commencement.

(4) Stage of full owners Colonists get to this stage when one-third of their debts is paid.

(5) Stage of clearing all debts. Colinists were advised that under no circumstances should they delay refunding their debts after 35 years of receiving their farms.

Between 1928-39 the efforts for this type of colonization have resulted in colonizing the following areas by both mentioned organizations in the whole of Tripolitania.(13)

Organization	Area (in hectares)
ENTE	55,058
I.N.P.S.	46,128
Total	101,186

The distribution of these areas by settlement and organization is as the following figures indicate in hectares.(14)

Province & Settlement	Total Area	Area Developed	Number of Holdings	Area Afforested
	(A) ENTE			
(1) Western Province(totals)	2,372	1,970	178	55
Oliveti	1,657	1,470	49	50
Mamura	715	500	129	5
(2) Eastern Province(totals)	45,882	22,720	952	130
Gioda	2,288	1,200	100	20
Crispi	9,140	3,700	370	50
Garibaldi	19,869	9,420	314	10
Brevilieri	14,085	8,400	168	50
Naima	500	?	?	?

Province & Settlement	Total Area	Area Developed	Number of Holdings	Area Afforested
(A) ENTE (cont'd)				
(3) Central Province(totals)	6,804	2,010	57	170
Fonduk	1,235	810	27	150
Azizia	5,569	1,200	30	20
(B) I.N.P.S.				
(1) W.Province(totals)	17,918	14,267	595	563
Oliveti	1,393	1,282	72	?
Hascian	354	339	19	5
Bianchi	6,121	4,163	167	412
Giordani	5,207	4,725	189	105
Micca	4,843	3,758	148	41
(2) E.Province(totals)	28,210	21,826	461	400
Castleverde	2,200	1,625	65	400
Corradini	2,973	2,560	66	?
Marconi	8,282	6,684	150	?
Tarhuna	14,755	10,957	180	?
Grand Total	101,186	62,706	2,249	1,318
Settlements which form part of the western coastal zone are:-				
Oliveti (Ente)	1,657	1,470	49	50
Mamura (")	715	500	125	5
Oliveti (I.N.P.S)	1,394	1,282	72	?
Hascian (")	354	339	14	5
Total	4,120	3,591	260	60

The above figures give our region the following percentages as regards the colonization of the whole western province. 25% of the total area acquired, 18% of the total developed area, 34% of the total holdings and 10% of the area afforested.

Generally speaking, the colonization of the western district is regarded as one of the best throughout the whole country and more still the colonized part which lies in the western coastal zone.

Both Oliveti and Hascian Settlements were built for Italian farmers. But in the case of colonizing el Mamura village the scheme, which was laid down by the Ente in 1939, did not intend settling Italian farmers as elsewhere. The real purpose was to provide second class farms for Libyans especially ex-soldiers as rewards for their services and loyalty to the Fascist government. However the outbreak of the World War II stopped the scheme; it was not until 1954 that the Libyan government completed it.

Detailed statistics of Italian population in Tripolitania since 1936 are not always available. According to the census of 1936 their number was 43,124 persons and by 1940 the figure was estimated to reach about 100,000. However after the defeat of the Axis forces in North Africa in 1943 the figure declined as low as 40,000 mainly caused by their mass repatriation. One estimate for Italian peasants in 1950 is as follows:-(15)

		Total Area (in hectares)	Population
(1)	Concessions	122,000	7,400
(2)	Settlements	101,086	11,000
	Total:	223,086	18,400

These figures give an average of about 12 hectares per head. The ratio is c. 17:8 hectares per head between concession occupants and demographic settlers. The last available figure for Italians in Tripolitania is given by 1954 general Census. It was 37,600 of whom 1,503 are to be found in our region.

In the western province we find that nearly all the concessions areas lie within the western coastal region (see fig. .21).. These areas together with the demographic areas give a total of just over 30,000 hectares while the Italian population in 1958 was only 1,402 persons of whom about 85% are farmers which actually means a proportion of about 21 hectares per head. More important still, this area presents about 15% of all the arable land in the whole region which supports a total population of about 135,000.

Excluding cereal production, which is basically cultivated on the principle of dry farming or as shifting agriculture in the Jefara to the south, and dates, which are mainly grown by the natives, the cash-crop production of the region is reliant on these Italian farms.

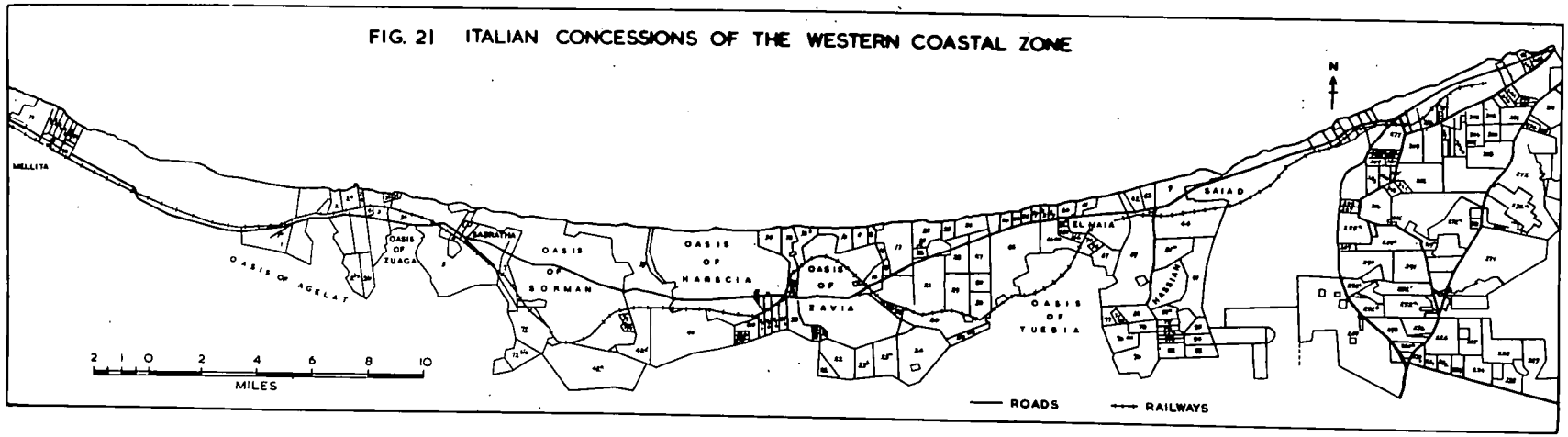
After the World War II Italy tried her best to return to her former colonies including Tripolitania. However her efforts were in vain and Libya as a whole gained its independence. The destination of the Italian governmental properties including the demographic farms remained unsettled until the Libyan-Italian agreement was signed on the 30th of March 1957. The final solution of this vital problem can be summarised as follows:-(16)

(a) Property should be given to colonists whose farms have reached a stage of full productivity.

(b) Farms where productivity is still nil have to be handed immediately to the Libyan government.

(c) Farms which have been developed but have not reached a stage of full productivity should have a chance of four years in which, by financial help by the Italian government, they have to reach full productivity, and if not their property goes to the Libyan government.

FIG. 21 ITALIAN CONCESSIONS OF THE WESTERN COASTAL ZONE



According to this agreement property has been given to all the Ente and I.N.P.S. farms in the Oliveti and also the I.N.P.S. Hascian farms. In other words all the demographic farms in this coastal belt, because of their full productivity, have been given to their Italian owners. (see figs 22 & 23) The agricultural importance of all the Italian farms within our zone will be dealt with in a later chapter on agriculture.

As far as farming technique is concerned all of these farms are in a good position. But keeping these farms functioning normally without outside help is very doubtful especially now when all of them are in immediate need for new replacement of their implements. This means that many of these farms have failed to support themselves which is the reason behind the sale of some of them.

Labour on these farms is not entirely Italian; on the contrary it is mostly native as since the War colonists began to employ one or more native families. The reasons were not only need for labour but also security against quarrels with the natives and robberies especially during drought years. In many cases these Arab families became partners even in the farm property itself.

This is how the Italian colonization started, extended and got to its final stage. Looking through these episodes we come to the conclusion that the whole enterprise which was described by Marshall I. Balbo as "Una grandiosa opera di colonizzazione, su un territorio che fa parte integrante della Patria, a exlusivo benefico della Patria, sotto le insegne della Patria Fascista" did not succeed to provide the real purposes behind it, that is to say, first that the agriculture of the enterprise must operate as a supplement

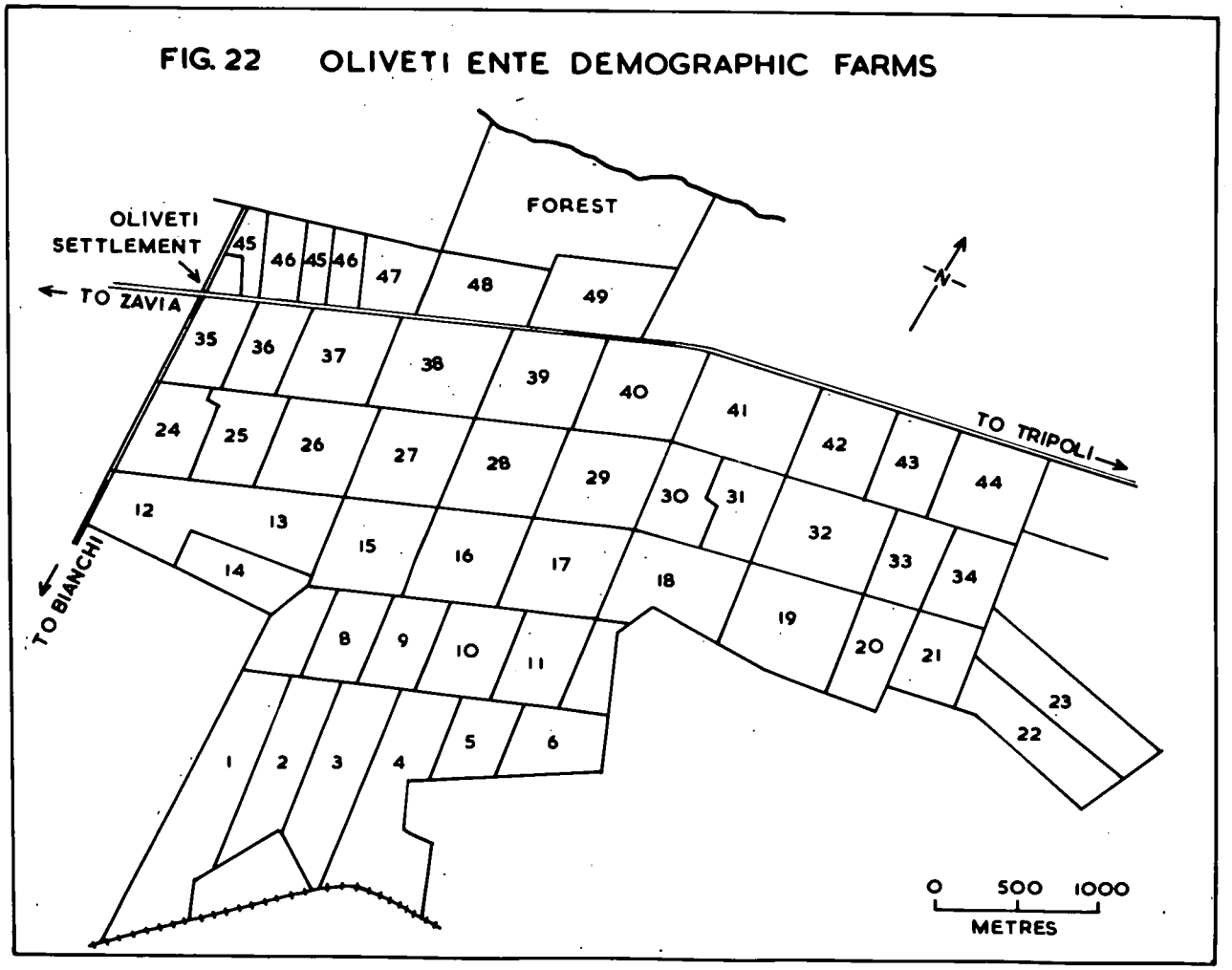
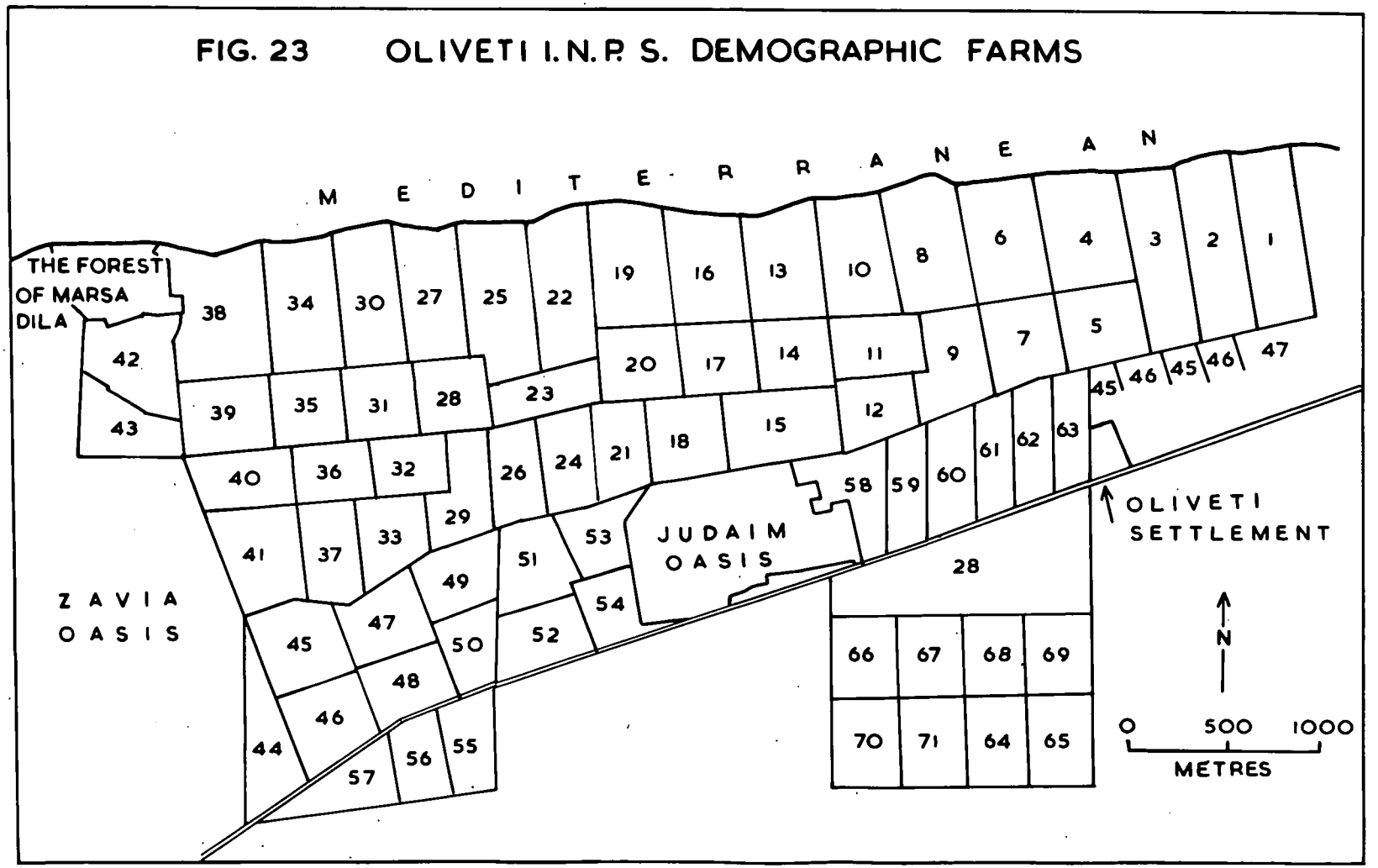


FIG. 22 OLIVETI ENTE DEMOGRAPHIC FARMS
FOREST
OLIVETI SETTLEMENT
TO ZAVIA
TO TRIPOLI
TO BIANCHI
N
45
46
45
46
47
48
49
35
36
37
38
39
40
41
42
43
44
24
25
26
27
28
29
30
31
32
33
34
12
13
14
15
16
17
18
19
20
21
22
23
8
9
10
11
1
2
3
4
5
6
0
500
1000
METRES

FIG. 23 OLIVETI I.N.P.S. DEMOGRAPHIC FARMS



to that of Italy and second that colonists should be politically very strong and therefore numerous. Thus we see the failure of the enterprise from the Fascist point of view. But on the other hand, as far as the Tripolitanian economy is concerned the scheme, though its final results are still doubtful, presents a very prosperous prospect if only more attention and financial help are paid.

Finally we must emphasise again the consequences of this enterprise upon the native people whose lands were taken:-

(1) Migration of a great number of them to the neighbouring countries especially Tunisia and Egypt.

(2) Thousands more compelled to join the Italian army.

(3) The increase of the native semi-nomads and nomads.

(4) Migration to Tripoli city.

References

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(2) Ibid, p.281.

(3) Arab League. Kitab el. Dawra el. Rabiha. Baghdad 1954. p.266.

(4) Ibid, p.182.

(5) A. Piccioli. La Nuova Italia d'Oltremare Rome 1933, pp.422-23.

(6) Governo della Tripolitania. Attivita di Volorizzazione Agraria in Tripolitania 1930 p.10.

(7) Ibid, p.11.

(8) Sir E. Russell, op.cit. p.281.

(9) Sir E. Russell, op.cit. p.283.

(10) Governo della Libya. Annario Generale della Libya 194, p.60.

(11) Sir E. Russell, op.cit. p.283.

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(14) Ibid, p.93.

(15) Arab League, op.cit. p.268.

P A R T III

CHAPTER I

CULTIVATION.

On many previous occasions we have emphasized that agriculture is the main source of existence for the majority of the people not only in our western coastal belt but also in the country as a whole. This is true for the present and perhaps will remain so in the future because of the lack of mineral deposits and capital, among other factors. This means that industry should be excluded from plans for a large and sound future economy unless the discovery of oil, in commercial quantities, becomes certain. On the other hand, in the last four centuries at least there were two other sources of income besides agriculture, namely trans-Saharan trade and piracy. The first of these sources came to its end at the end of the 19th century when both Britain and France opened Central Africa and changed the route of this trade to the Gulf of Guinea. The second was also eliminated by strong European and American fleets in the Mediterranean. Thus the country became reliant on agriculture alone. This agriculture was carried on a small scale sufficient to meet the need of food for local consumption. Such conditions remained unchanged until the Italian occupation. The long wars with the natives and the confiscation of their best lands were really painful blows to the indigenous population who were left with no alternative but to join the Italian army or become unskilled workers. In other words most natives became dispensable to the economy and lived upon what they could get from these sources of employment. But on the other hand and without regard to these harmful facts the Italian agricultural schemes have created the present modern

agriculture, without which our area and the rest of the country would be still dominated by the limited traditional type of cultivation and no progress in this field would have taken place.

Moreover, the development of the Italian agricultural schemes was also combined with many other aspects, though of military significance, such as the foundation of numerous military camps and installations, building roads and railways. All these projects together with the maintenance of military forces in the country created widespread employment with the result that the Tripolitanian economy became linked with that of Italy. After World War II a similar situation persisted due to the existence of the Allied Forces.

After 1951 when Libya became independent it was obvious that this new state could not build her own economy without foreign aid. This striking fact caused the United Nations, the United Kingdom and the United States to offer their help. But whether this foreign aid will continue or not is not clear yet. Certainly such help cannot continue for ever. Therefore I would like and strongly emphasize that for full benefit from this foreign aid it must be devoted to develop the country agriculturally in the first place. This in my opinion can be done by the following means:-

(1) The total of this aid must be spent and supervised by the local government, as still a large part of it is spent by the foreign aid agencies themselves.

(2) Experts must be fully qualified and with previous work in similar climatic conditions. At present a large part of these so-called experts are not really qualified despite their huge salaries.

(3) A long term policy must be followed. First, there should be a complete

water survey, without which any future development can only be a failure. Second, agricultural experiments of all kinds should be for long enough periods. Third, studies should be made of the possibilities of improving on the present agricultural sources of income such as livestock and both the Italian and Arab products.

(4) Education must be increased not only by opening new schools but also by devoting enough time for agricultural education. It is also very important to open a Faculty of Agriculture in the Libyan University as soon as possible, and also to establish intermediate agricultural schools.

(5) Agricultural credits should be made available and must be given first to farmers who have proved their ability.

(6) Extra credits should be given to the Italian settlers to replace their old and non-productive machines.

(7) More water can be obtained in the native wells by using mechanical drilling methods.

(8) Special efforts should be devoted to create new settlements wherever possible as most of the present oases have become over-populated, Zavia for instance.

(9) The present Moslem law of inheritance should be changed in order to keep land property undivided. Examples of fragmentation of property will be given later.

(10) More artesian wells have to be dug and the utilization of those already in existence should be put in action by experimenting with the most suitable crops.

(11) The present electric generating stations must be enlarged. Examples

from Zavia alone showed that in 1957 more than one hundred applications were made in order to erect electric pumps. Of course these applications have to be refused due to the limited electric power.

These recommendations and many others should be carefully considered and put in practice if there is to be any agricultural development, or indeed a sound economy aiming to promote the present living conditions for the majority.

It is estimated that between 70 and 80% of the Tripolitanian population are directly or indirectly engaged in agriculture. The rest depend on commerce, government employees and on industry. Conditions in our region are approximately as shown below:-

(a) 5% to 7% depend on industry.

(b) 3% to 4% depend on commerce.

(c) 3% to 4% depend on work with the government.

(d) 85% to 89% depend on agriculture.

This last fact indicates the importance of agriculture and how essential it is that this source of living should be greatly developed and restored.

The method of studying this main source of income will be divided into two sections, the first of which will deal with the native agriculture, while the second will deal with the Italian agriculture.

(A) NATIVE AGRICULTURE

This type of cultivation is often described as the traditional agriculture, but can be subdivided into two different types. The first type is irrigated cultivation carried out in the oases gardens; the second is dry farming on the Jefara plain.

(1) GARDEN CULTIVATION

This kind of cultivation is carried out by the cultivator's family, or under the Jebbad system. The Jebbad provides the manual work and gets half the crops in return. Moreover, besides being irrigated it is carried out all the year round. Other important characteristics of this agriculture are that it is primitive and limited in scale. The first of these two facts is a reflection of the present educational status of farmers and also the common poverty which stands as an obstacle to any changes in the methods and means of this cultivation. The second fact is a reflection of the natural conditions, as climatic, physical and water supply conditions are the facts behind the limited areas of oases. Poverty also helped to impede any expansion of the present cultivated areas. Moreover the Moslem inheritance law has played an important part in subdividing these cultivated areas or gardens among the owners' descendants. Consequently and as a result of the increased population over 90% of the gardens have several owners, each of whose property is scattered in various gardens. Undoubtedly a solution to this problem will contribute to the progress of garden cultivation.

The following three examples taken from three different gardens in the area of Vast Ali tribe in Zavia will explain the problems of fragmentation of property not only in Zavia but all over the region.

(a) Saniat el.-Maddah This garden lies about one kilometre west of el-Hara. The total area of the garden, which has one well only, is 7,808 square metres, and is divided unequally among five owners of whom one has no other land property in the oasis. The distribution of this garden is as indicated below:-

(1)	I. Maddah	-	3,744 sq. metres
(2)	C. Maddah	-	3,264 " "
(3)	R. Brahim	-	320 " "
(4)	B. Maddah	-	320 " "
(5)	M. Maddah		160 " "
	Total		7,808 sq. metres

Moreover the first owner has two sons and two daughters, the second has three sons and one daughter, the third has two sons and two daughters, the fourth has no children, and the fifth has two daughters. Under the present Moslem law each property will be divided among the owners' descendants after his death, in the ratio of two parts for a male and one part for a female. In course of time, no valuable land would be left for cultivation.

(b) At present in the same Cabila, which has about 550 people, there is only one garden individually owned. This garden is known after its owner, Y.Beddah, and it is comparatively small, just less than 2,000 sq.metres. Still, in course of time, this garden will be divided among four brothers and three sisters. These two examples are typical of our region.

(c) Moreover fragmentation of property may exceed such examples and still be common. The following example may illustrate this. The property of this case is an olive tree about 30 years old and known as Zetunat Bin Hamza. The yield of this tree in an average year is estimated at about 25 Marta or about 350 kgs. of olives. This yield is distributed roughly as follows:-

(1)	M. Ramadan	-	35%
(2)	Y. Beddah	-	12%
(3)	I. Maddah	-	8%
(4)	S. & I. Maddah	-	10%
(5)	H. Ramadan	-	9%
(6)	T. & A.Ramadan	-	12%
(7)	S. & M.Ramadan	-	14%

In other words this tree is owned by ten families or about 60 people.

Information of these examples was given by the Sheikh of this tribe.

Most of the gardens vary from half to three quarters of a hectare. This fact together with the widespread fragmentation of property explains the limited scope of the present garden cultivation. The distribution of the gardens by locality is as given below, according to information obtained from Zavia Agricultural Statistics Department in 1958.

Locality	Number of Gardens
Zanzur	1,821
Zavia	2,406
Sorman	1,007
Sabratha	1,237
Agelat	616
Zuara	47
Total:	7,134

During the year 1956/7 the total area irrigated by Jedula (Irrigated plot) was as given below. Figures also obtained from Zavia Agricultural Statistics Department in 1958.

Locality	Number of Irrigated plots
Zanzur	606,500
Mamura	16,600
Zavia	274,910
Sorman	209,270
Sabratha	277,700
Agelat	138,020
Total:	1,523,000

In 1951 Dr. Shenwani in his report on the Vital Statistics of Libya gave the following figures regarding the distribution of the irrigated land by family in two Zavia tribes.(1) These statistics may also be taken as examples for an area from Zanzur in the east to Agelat in the west; in other words where irrigated agriculture is the dominant type of cultivation.

Area irrigated in sq.metres.	Number of families	
	Vast Ali	U. Tawil.
Nothing	29	99
Less than 50	1	11
50 to 100	18	38
100 to 200	4	68
200 to 300	11	52
300 to 400	4	43
400 to 500	13	19
500 to 600	6	8
600 to 700	-	1
700 to 800	-	1
800 to 900	3	-
900 to 1,000	-	-
1,000 to 1,500	5	4
1,500 to 2,000	1	-
Over 2,000	2	7
Total:	97	351

Garden cultivation is primarily devoted to olive and palm trees. Fruit trees are of minor importance. Other seasonal or yearly crops are peppers, potatoes, tomatoes, green beans, lucerne, etc.

Tree cultivation, which are grown all over the gardens, has special importance due to the fact that olives provide oil besides being considered, among the majority, as the main tree cash-crop. More details about olives will be given in the chapter on industry. Dates are consumed when harvested and also as a food supply after being prepared and packed. Oranges, apricots, grapes, etc. are grown mainly for home consumption.

Peppers, tomatoes, potatoes, etc. are also grown for home consumption. Forage crops, of which lucerne is of special importance, are mainly to feed the animals, which provide the water lifting power. Production of the non-tree crops varies from one garden to another, and from season to season. Generally speaking such production is very limited indeed and does not contribute greatly to the farmer's income. Statistics showing the total production of these crops are not available, due to the fact that there are no official estimates.

On the other hand, as regards tree crops, the following figures given by T. Theodorou in his report on Indigenous and Italian Farm Enterprises in the Zavia Area 1954 (p.30) may illustrate the relative importance of different trees in most of our region, apart from Zuara where no irrigation is practised.

Kind of Trees	Number of Trees	Percentage
Olive trees	5,850	42%
Citrus fruit trees	254	2%
Almond trees	186	1%
Palm trees	6,558	47%
Other fruit trees	1,069	8%
	13,917	100%

From these statistics we notice that the most common tree is the palm tree followed by the olive. The same figures which are taken from seventy gardens give an average of 199 trees per farm. About 95% of the garden trees are irrigated. The reason is that the garden area is very limited and therefore the farmer tries to utilize this land as fully as possible and so trees are planted densely with intercultivation of vegetables and other crops.

Palm Trees

The following statistics issued by Zavia Agricultural Statistics Department in 1958 show the distribution of palm trees in our region:

Locality	Number of Trees
Zanzur	131,295
Zavia	129,295
Sorman	61,568
Sabratha	26,800
Agelat	71,668
Zuara	63,520
Total:	484,146

It is estimated that in normal years every 100 palm trees give 8 to 10 quintals of dates. There are more than 10 different species of palm trees in our western coastal belt of which el-Bekrari, Tabuni and el-Baiudi are of special popularity. Other species include el-Lemsi and el-Hellawi. The dates of these two species are only used as fresh fruits. On the other hand dates of the first three species are almost always packed and used later on. The remaining species, on the other hand, are generally used for feeding camels and cows. The common name of these species is Ammi.

Over 80% of the annual production, estimated at 3,000 to 5,000 quintals, is consumed locally. This percentage also includes the proportion consumed by the semi-nomadic tribes of the Jefara. The rest is sent to Tripoli either to be manufactured into Bukha (an alcoholic drink) or prepared and packed in the Tripoli date factory.

In my opinion the western coastal zone, which has about one third of the Tripolitanian total palm trees, can expect a reasonable income from dates if a new policy is followed. Above all there must be no more than one or two good and selected species instead of the present varieties which are of inferior quality. Governmental supervision and help is needed to provide the selected species at cheap prices, and to make the public aware of the best

methods for the new plantation.

Fruit Trees

Unfortunately there are no separate statistics for the native fruit trees. Because of their limited numbers, they are included with those found on the Italian farms.

From the former description of the garden cultivation we find that this traditional agriculture faces many chronic and complicated problems including fragmentation of property, lack of capital and the use of old and primitive tools. These problems give their reflection in the present farmers' low standard of living from the economic, health and social points of view. Therefore a full scale study of these problems and the finding of immediate and effective solutions is of vital importance without which no adequate and secure source of income for the majority will be possible.

2. JEFARA CULTIVATION

The Jefara plain south of our region is completely outside the limits of our study. But the fact that shifting agriculture and livestock farming on this plain are almost carried out by people from our zone, to whom they are two important sources of income, necessitates the study of them, but only as far as the human activities of our region are concerned. The livestock economy will be examined separately.

Cereal cultivation

Cultivation of cereals on the principle of dry-farming was and still is the spinal cord of the western coast belt native economy. The importance of cereal cultivation lies in the fact that the indigenous food is based on barley among both lower and middle classes and wheat in the high income group.

Natural conditions, of which rain is all important, determine the yearly barley and wheat productions. If enough rain falls during the sowing season large amounts of both cereals are sown. Moreover if the rainfall is well distributed during the growing season this will give healthy and well bearing plants. With such conditions plus enough rain in March the result is undoubtedly an excellent harvest. Such years are very rare. On the other hand in many years crops fail due to the lack of the spring rain, the mal-distribution of rainfall during the growing season or because of the Ghibli if it occurs when cereals are ripening and lasts for a long time. Because of all these disadvantages cereal cultivators seek to sow in selected spots over as wide an area as possible.

Cereals are grown on the system of share cropping. In other words two or more cultivators join together each with his seeds and animals. When the sowing season starts in the late autumn they leave for the Jefara to search for the best watered lands. The amounts of rainfall and seeds determine the length of their stay in the Jefara. Usually it is between 10 days and one month. When cereals start to ripen in the middle of spring the cultivators usually accompany their families and leave again to harvest their crops. This season is longer than the first one and in many cases it ranges from a month to two months.

The following statistics show the total amounts of seeds and harvests for the year 1957/58, which is a fairly good year, as given by Zavia Agricultural Statistics Department in 1959.

Locality	Seeds (in quintals)		Production (in quintals)	
	Barley	Wheat	Barley	Wheat
Zanzur	203	8	1,756	40
Zavia	292	34	2,206	289
Sorman	34	11	512	34
Sabratha	65	1	770	8
Zuara	340	44	3,100	350
Total:	934	98	8,344	721

Cereal production in both average and good years leaves an exportable surplus. On the other hand a tremendous shortage is certain in drought years. Therefore a government policy aiming to keep and store some of the surplus in good years in order to provide a food supply in the critical years is an essential step to avoid starvation for many hundreds.

The adoption of improved methods and means for both dry-farming and irrigated Arab cultivation will certainly give a considerable increase in yields. As far as cereal cultivation is concerned the following means will satisfy this. First, most of the foreign experts agree that the growth of cereals in rows instead of the traditional way will enable a considerable increase on the present yield. O.J. Wheatley states "Probably the most promising single improvement would be to grow cereals in rows instead of broadcast, as it is now the practice".(2) Secondly, there should be a more effective wa way than the present one for leaving the land fallow. At present cultivators, despite the shortage of manure, sow the land for two to three successive years, if it is watered enough and then leave it for a similar period without cleaning the winter weeds. Therefore some kind of rotation and looking after the fallow land is a necessary step for any further yield. Finally, seeds should

be carefully improved and selected. At present most of the cultivators use very inferior qualities, merely because of their cheapness. Therefore a governmental programme is needed for seed selection, multiplication and distribution to the farmers.

Dr. Shenwani also gave the following statistics showing the distribution of the Jefara land ownership in the former two tribes of Zavia.(3)

Area	Number of families	
	Vast Ali	U. Tawil
Nothing	67	213
Less than one hectare	1	5
1 to 2 "	11	58
2 to 3 "	3	6
3 to 4 "	5	29
4 to 5 "	1	6
5 to 6 "	4	27
6 to 7 "	-	-
7 to 8 "	-	1
8 to 9 "	-	-
9 to 10 "	-	-
10 to 15 "	1	3
15 to 20 "	1	-
20 to 25 "	2	-
25 to 30 "	1	-
Over 30 "	-	3
Total:	97	351

These figures indicate that although the proportion of families who possess no land property has nearly doubled itself as compared with those who have no land property on the oasis, the average land property has increased tremendously. Now only about 10% of the total Arab farm area is found in the oases while the rest is found on the Jefara.

The average quantity of barley seed sown per family is between 20 to 80 Kgs. while the wheat is much less and ranges from 10 to 40 Kgs. The reason for this is that the wheat matures about three weeks after barley and is

therefore more susceptible to the Ghibli. Also it needs more water and better soil. Consequently wheat production is below requirements and the supply has to be made up by importation. The country's requirements of barley and wheat are estimated at 35,000 and 50,000 tons respectively. On the other hand production varies from 20,000 to 120,000 tons of barley and from 2,000 to 8,000 tons of wheat.

Camels, cows and donkeys provide power for ploughing. Ploughs are normally made of wood. (see plate XXII). Iron ploughs and tractors are used on a small scale by a few cultivators whose properties exceed 30 hectares.

B. ITALIAN AGRICULTURE

There are two rather distinct types of farming carried out by Italian farmers in our region. The first type is the large farm operation or so-called concession. The second is the much smaller operation called the demographic farm. Crops are more or less similar but still there are substantial differences in size, financial status and in management. The differences are due to the Italian policy of developing Tripolitania agriculturally. At the beginning of this policy only concessions were founded. After the rise of Fascism in 1922 this policy was still in practice and continued so until 1928, when fundamental changes occurred due to the failureof the concessions to encourage a mass Italian migration. A new governmental systematic policy was introduced in 1933 under the Count Volpi. The intention of this policy was to make the family and not the individual the unit of agricultural development schemes. Details of both concessions and demographic farms were given in the Italian colonization chapter.

From the agricultural point of view the concessionaire is relatively

wealthy. The fact that most of the concessions vary from a few hundred hectares to more than one thousand hectares in size means that work is almost entirely performed by hired labour, primarily Arab, although it is common for a concessionaire to employ Italian working families and foremen.

Production methods are modern due to the use of tractors and other machinery. Moreover water is, in most cases, available due to the widespread use of electric pumps, diesel motors and wind pumps. The number of wells in a concession varies from 2 to 7.

Generally speaking, the concessions in our region are the most profitable agricultural enterprises despite the fact that work is still frequently handicapped by the shortage of working capital due to the inadequate credit facilities. Therefore the availability of such credits will certainly cause a substantial increase in the total production and more still it will help to provide extra work for many hundreds.

As regards the demographic farms the manpower was entirely supplied by the farmers and their families. But since the country's independence ten years ago the Italian settlers began to employ one native family at least. The reasons are to supply substantial labour, to secure the farms from thefts, and finally to avoid quarrels with the native people.

Broadly speaking, the demographic farms are also efficient types of agricultural operations. Tractors and other machinery are used though less than on the concessions mainly because of their comparatively small sizes and the capital invested. The average size of the demographic farm in the western coastal belt is about 30 hectares. Each of the demographic farms has only one well. Electricity is provided only for 8 hours a day, which is

very limited and needs to be increased to 12 hours at least. At present less than 30% of the total demographic farms use sprinkler irrigation system. The same percentage applies to those who use diesel motors for extra water supply. This is also due to lack of capital and credits.

Manure whether natural or chemical is well used on both Italian types of farms. The natural manure is obtained from the animals kept on the farm or by gathering the tree leaves and the used hay in a cemented tank and adding water from time to time until the whole lot becomes well mixed. In many cases farmers follow this method due to the high prices of chemical manure. (see plate XXIII)

Broadly speaking, the management of the Italian farms is well organized and the farms can be rightly considered as efficient as those found in other advanced agricultural areas in the world. But still a tremendous improvement in yield can be obtained if credit facilities are made easier and more available.

During the last five years the lack of both credits and moral encouragement caused many Italian farmers especially concessionaires to sell their farms to wealthy native people. The total number of concessions sold reached 55 or about 44% (see page 173)

Agriculturally speaking, most of the native owned concessions became less productive than they were. The reasons are mainly lack of agricultural education and bad management. In my opinion the government should do its best to encourage the remaining Italian concessionaires to stay permanently if there would be any substantial increase in production.

The traditional agriculture by the natives is more or less restricted

for the purpose of self sufficiency and therefore unlike Italian agriculture it is not important for the production of the cash-crops upon which a large part of the whole country's exports depends.

The Italian farmer in our region depends on producing a few crops of which groundnuts, olives, almonds and citrus trees come in the first place. His other sources of income come from livestock production and the cultivation of less important crops such as potatoes, tomatoes, beans, green beans, peas and forage crops.

As far as tree cultivation is concerned the following statistics, also given by T. Theodorou, will help to explain the utilization of the Italian farm, which has an average area of 151.5 hectares, from this point of view(4)

Kind of trees	Percentage
Olives	74%
Citrus fruit trees	9%
Almond trees	14%
Date palms	-
Other fruit trees	3%
	100%

These percentages were obtained and based on the fact that each farm has an average of 3,588 different trees. Only 27% of these trees are found to be irrigated.

T. Theodorou also gives the following percentages from land classifications point of view.(5)

Kind of land	%
Irrigated	9.4%
Dry farmed land	61.0%
Pasture land	21.4%
Waste land	7.1%
Land in farmstead and roads	1.1%
	100%

These percentages show that the irrigated areas are very limited indeed. Certainly providing more water supply will increase such areas and the result would be a general increase of the farm production.

Most of the areas given to dry farming of tree crops is occupied by olive and almond trees. Citrus and other fruit trees, on the other hand, are grown in irrigated areas. Details of olive trees will be given later. Statistics of citrus trees including the indigenous trees too for the year 1956/57 are as given by Zavia Agricultural Statistics Department in 1958.

Kind of Citrus trees	Number of trees	Production (in quintals)
Orange	31,030	3,070
Tangerines	8,084	297
Grape fruit	247	22
Lemons	1,355	110

Apart from the lemons over 90% of the production comes from the Italian farms.

Almond trees are almost confined to the Italian farms too. However despite the adaptation of these trees to local climatic conditions and also the fact that almonds can be grown easily on the principle of dry farming the natives did not take any interest in growing them especially in the case of Zuara where only a total of about 5,000 trees are to be found. More than 50% of the total trees are found in the Zavia area. Figures of the whole region are just under 50,000 trees. There are no definite estimates for the total production. Semi-official information indicates that such production ranges from 400 to 700 quintals.

Other trees found on the Italian farms include apricots, peaches, figs, as well as grape vines, which are distinguished in the data given below. The source is Zavia Agricultural Statistics Department 1958.

Kind of trees	Number of trees
Grape Vines	851,537
Other fruit trees	101,150

Over 90% of the grape vines are found on the Italian farms. Most of the production is made into wine. The rest is sold on the local markets.

The majority of the so-called other fruit trees are also found on the Italian farms. The cultivation of these trees is practically restricted from Zanzur in the east to Zavia in the west. There are no official estimates for this area's production, but generally almost the whole fruit crop is consumed locally either by the cultivators' families or by sale on the local markets.

Other seasonal crops grown on the Italian farms are groundnuts, the most important non-tree cash crop, tomatoes, potatoes, beans, green beans, vegetables, etc.

The history of groundnuts in Tripolitania goes back to about 30 years when the Italians first began to experiment on this crop. Nowadays groundnuts are the most popular crop because of their great demand in the world markets and consequent high prices.

The cultivation of this crop is entirely irrigated, and needs to be irrigated at least once a week. The use of the sprinkler irrigation system has greatly facilitated and increased the areas grown every year and it has become the most valuable cash crop for export in the present agricultural production of the whole country. In 1957 the groundnuts exported amounted to 17.8% of the total export.(6)

In recent years the average production per hectare began to decrease. Research on this problem has shown that the groundnuts appear to suffer from

the lack of mineral deficiency which takes a form of yellowing of the plant leaves which is associated with a loss of yield. Therefore it is of vital importance to the country's economy to devote more work and study to this serious problem and find a solution to it.

The following statistics obtained from Zavia Agricultural Statistics Department in 1958 show the areas of groundnuts and estimated crops.

Locality	Area (in hectares)	Production (in Quintals)
Zanzur	372	8,408
Zavia	864	21,412
Sorman	125	3,250
Sabratha	55	1,210
Total:	1,416	34,280

These figures give an average production of 30.7 quintals per hectare, which is very satisfactory as compared with only 23 quintals for the whole of Tripolitania. Also for the same year the production of the western coastal belt amounted to about 35% of the total amount in the whole of Tripolitania, an illustration of the importance of this cash-crop to the economy of our region.

Only 9.4% of the Italian farms are irrigated due to the limited water supply. Therefore, if this water shortage can be solved a considerable increase in this crop can be easily gained which undoubtedly will raise the farmers' income and provide more work and foreign exchange. Most of the Tripolitanian groundnuts are sold in the European markets mainly in Germany, Britain and Holland.

Apart from groundnuts other seasonal or yearly crops on the Italian farms are mainly cultivated for home and local market consumption. This is the case for tomatoes, potatoes, beans and vegetables. The average area of these crops, in most cases, does not exceed half to one hectare except in the case of

tomatoes. In recent years its cultivated area began to increase due to the self-sufficiency policy and the restriction on imported foreign tomatoes.

Besides the former different crops the Italians also cultivate a few hectares of wheat and barley on the principle of dry farming. Barley is used to feed the farm animals while wheat is used for domestic consumption.

This is the general picture of the present agriculture carried out in the western coastal belt, of which we immediately recognize the importance of the Italian farming due to its efficient and significant contribution to the agricultural economy of this zone. For further development and production two urgent needs should be fulfilled as soon as possible in the case of the Italian cultivation. Agricultural credits and loans must be available, and secondly increased water supplies must be provided.

On the other hand as far as the traditional agriculture is concerned there should be immediate improvements in the methods practised at present, an increase of the oasis areas by expanding the present southern limits and finally the introduction of new selected species especially in the case of shifting agriculture. Moreover it is necessary to form agricultural co-operative societies for both native and Italian farmers.

As for future agricultural settlements I should like them to be based on the system of collective farms. The reasons are mainly the success of such system all over the world, that it would effectively help to keep land property undivided, and that it would probably increase yield.

References

(1) Dr. Shenwani. Vital Statistics of Libya. F.A.O. Tripoli 1951.

(2) O.J. Wheatley. Report to the Government of Libya on Agriculture. F.A.O. Rome 1951, p.77.

(3) Dr. Shenwani, op.cit. p.153.

(4) T. Theodorou, Report to the Libyan Government on Indigenous and Italian Farm Enterprises in Zavia Area, F.A.O. Rome 1954, p.30.

(5) Ibid, p.20.

(6) External Trade Statistics, 1957, p.V.

P A R T III

CHAPTER II

LIVESTOCK

The livestock economy of the western coastal zone cannot be dealt with separately from the Jefara plain to the south. The reason is that most of the livestock raised on this sector of the plain is owned by people from the western coastal region. The system followed is that the shepherd, usually from the semi-nomadic tribes of the Jefara, takes both sheep and goats and raises them. He receives in return two and a half pounds, about 150 kgs. of barley and one lamb for every twenty five heads reared per year.

Livestock, whether raised on the Jefara or kept and fed by hand in the sedentary farming areas, is the second pillar of the economy of the western district after cereals. Most of the livestock in this region is owned by the Arabs, who adhere closely to the traditional methods which have been handed down from antiquity.

The Survey of Land Resources in Tripolitania 1954 states that livestock raising falls into three main groups: (a) Nomadic (b) Semi-nomadic (c) Static[1]. Broadly speaking, this is true as regards the whole country, but to say that the largest proportion is semi-nomadic and is kept and fed in the static farming areas of the oases during the summer migrating to the semi-desert of the Jefara for the winter and spring is not absolutely true. The fact is that less than 5% mainly of old and weak sheep and goats are transferred from the Jefara to the oases in the hot periods where water, shelter and food can be easily provided.

Climatically speaking, we have noted that two main zones can be found in the western district: (1) the maritime region where extensive agriculture is taking place (2) the Steppe region of the Jefara. In addition we find a third minor zone known as the semi-desert in the extreme west, half way between the shoreline and the escarpment.

Certain livestock are always kept in the first zone. They include cows, pigs, donkeys, horses, camels, poultry and a few sheep and goats. Cows are used for lifting water from the wells in the Arab gardens while their main use in the Italian farms is for breeding and milk. Pigs are only found on the Italian farms as Moslems are not allowed for religious reasons to breed or eat them. The donkeys are mostly owned by the native people for riding purposes. On the other hand horses are almost entirely found on the Italian farms, for agricultural purposes. Camels are almost completely found on the native gardens, and are used for a great variety of purposes, such as milk, meat, riding and in agriculture. Poultry is found on both Libyan and Italian farms mainly for egg and meat production. The availability of drinking water, shelter and forage crops all the year round eliminate the possibility of any decrease in these types of livestock even in the severe drought years.

Livestock raised on the steppe zone are far more important economically, though less species are found than in the oases areas. Sheep, goats and camels predominate. The effect of the climatic conditions on this type of livestock is much more noticeable. Indeed the determining factor behind increasing or decreasing the totals of these types is the quantity and distribution of rainfall. In other words most of the grazing areas of the steppe zone are healthy and nutritious in both good and average rainy years.

On the other hand during periods of severe drought, which are very often coupled with a shortage of drinking water, grazing becomes impossible and consequently a decrease if not a great loss of the livestock numbers is absolutely certain.

N.T. Theodorou in his Report to the Government of Libya on Indigenous and Italian Farm Enterprises in the Zavia Area classifies the livestock in 70 Arab and 70 Italian farms as follows:(2)

Types of livestock	Libyan Farms		Italian Farms	
	Number of animals	Percentage	Number of animals	Percentage
Cattle	134	20%	499	43%
Sheep	1,613	28%	2,655	29%
Goats	1,074	19%	52	1%
Camels	101	20%	7	1%
Horses	26	5%	186	22%
Donkeys	72	7%	6	1%
Pigs	-	-	32	1%
Poultry	290	1%	1,872	2%
Total:	3,310	100%	5,309	100%

From these figures we notice that 94% of Italian animals are cows, sheep and horses. On the other hand the Arabs are more or less equally concentrating on sheep, cows, camels and goats, all of which amount to 87%. To make a full use of these statistics we must bear in mind the following facts. First, the average area of an Arab farm is 50.1 hectares while the Italian one has an average of 151.5 hectares. Second, while the Italian farm constitutes one piece of land in the coastal zone, the Arab farm includes three pieces of land, 10% in the coastal zone, 15% in the Jefara plain, known as Jettis locally, and 75% in the Jefara dunes. This division, which may apply to Zanzur and Sorman, does not apply to the rest of our region where no extensive or sedentary

farming is found and consequently livestock becomes dominated by sheep, goats, and camels mainly raised on the steppe zone as in Zuara district for instance.

In 1951 Dr. Shenwani in his report on "Vital Statistics of Libya" gave the following statistics as regards the ownership of sheep and goats in 408 native families in the Zavia area.(3).

Sheep numbers	Number of families	Goat numbers	Number of families
Nothing	409	Nothing	408
Less than 10	21	Less than 10	25
10 - 20	11	10 - 20	8
20 - 30	1	20 - 30	3
30 - 40	2	30 - 40	4
40 - 50	2	40 - 50	-
50 - 60	1	50 - 60	-
60 - 70	1	60 - 70	-

Over 90% of the above families have no sheep or goats and in general they have no other animals. The highest individual ownership of both sheep and goats in the western coastal zone is found at Sorman at a minimum estimate of 5,000 heads. The average among those who possess sheep and goats is estimated at 500 heads.

There is no adequate census of livestock in Tripolitania. Taxation in this field is based upon annual estimates given by regional committees. The fact that the more livestock the owner has the more taxes he has to pay has led to great inaccuracy in livestock numbers. Moreover, the fact that the members of these committees, with horses as their only method of travelling over the grazing areas, are bound to accept food and accommodation from the shepherds is also another reason in favour of suggesting a reasonable deduction in reply to what has been offered to them. Therefore an increase of at least 15% over the total figure seems necessary.

In studying the evolution of livestock in the western coastal zone we are going to deal with three of these so-called censuses.

(a) The first of these was held in 1928 by the Italian government.(4) Figures of this census are only available for both Zavia and Zuara districts without further break down into minor administrative regions.

District	Horses	Donkeys	Cattle	Sheep	Goats	Camels
Zavia	664	3,337	7,746	89,251	36,684	5,739
Zuara	488	1,261	121	58,916	14,087	4,772
Total:	1,152	4,598	7,867	148,167	50,771	10,511

No important Italian owned livestock is included in these statistics due to the recent start of their agricultural colonization.

(b) In 1946 a census was held by the British Military Administration. Distribution of livestock by minor administrative regions in the case of our region is available. Moreover the classification of livestock ownership between the natives and the Italians is also in hand.(5)

(1) Native livestock

Locality	Cattle	Sheep	Goats	Horses	Camels	Donkeys	Mules	Pigs
Zavia	1,892	17,250	11,043	319	1,811	1,212	-	-
Sorman	959	6,470	5,269	75	1,291	618	-	-
Zanzur	2,589	6,364	3,752	121	191	583	-	-
Sabratha	1,567	7,763	8,831	79	1,255	671	-	-
Agelat	559	10,780	13,037	59	2,770	695	-	-
Zuara	5	16,317	13,202	162	3,977	1,225	-	-
Total:	7,571	64,944	55,134	815	11,295	5,004	-	-

(2) Italian livestock

Zavia	1,147	755	339	357	8	44	512	437
Sorman	15	424	20	25	1	1	22	58
Sabratha	14	80	14	46	2	2	4	4
Zuara	-	15	11	3	6	6	-	-
Total:	1,176	1,274	384	431	17	53	538	499
Grand Total	8,747	66,218	55,518	1,246	11,312	5,057	538	499
Total of Tripolitania	31,553	385,508	501,880	5,781	55,791	27,386	684	1,814
Approximate % of our region.	28%	17%	11%	22%	20%	18%	8%	25%

Comparing these figures with those of 1928 we find two new species presented by mules and pigs. These two animals were first introduced by the Italians in the late 1930s. Moreover we notice that all types of animals except goats have been greatly reduced in numbers. The reason behind this phenomenon is a combination of the drought years of 1936 and 1946 and also the slaughter of many thousands during and after the World War II.

(c) The last available statistics of livestock are for the year 1957. Unfortunately no separate figures are available for the Italian livestock. Information was obtained from Zavia Agricultural Statistics Department in 1958.

Locality	Cattle	Sheep	Goats	Camels	Horses	Donkeys	Mules
Zavia	3,459	25,136	10,743	1,681	979	939	523
Sorman	777	6,706	4,794	776	42	411	-
Zanzur	2,081	9,970	2,882	1,061	252	958	49
Sabratha	1,224	6,761	5,223	1,007	76	630	2
Agelat	682	6,483	8,439	1,465	23	572	1
Zuara	12	19,056	11,216	5,401	62	952	3
Total:	8,235	74,112	43,297	11,391	1,434	4,462	578
Total for Tripolitania.	47,000	574,000	573,000	80,000	?	40,000	2,900
Approximate % for our region.	15%	13%	7.5%	12.5%	?	10%	20%

Comparing these percentages with those of 1946 we come across some astonishing facts. Firstly there is a general increase in all kinds of livestock although during the year 1947 livestock, especially sheep and goats, suffered enormously due to the severe drought. It was estimated that no less than half of the former species were killed through starvation. Furthermore, there has been an increased demand for meat by natives due to their improved standard of living. Secondly our region has become less important for live-

stock than it was in the previous census due first to its comparatively limited grazing area and second to the normality of rainfall in the past period, which meant that there was enough herbage elsewhere.

CLASSIFICATION OF LIVESTOCK

The following notes are intended to classify the different kinds of livestock from their economic point of view.

(1) Sheep Economically speaking sheep are the most important class of livestock despite the fact that they are less adapted than goats to withstand the fluctuations of the local climate. The majority of sheep belong to the Barbary race distinguished by its fat tail, which stands as a food supply during the summer periods when herbage becomes scarce and inadequate. Meat, wool and milk are the main three functions of sheep. The following statistics show the average production of these items per head.(6)

Meat in Kgs.	Wool in Kgs.	Milk in Kgs.
12	2.5	0.250

It is also estimated that 73% of the gross income of sheep is derived from meat, 18% from wool and 9% from milk. The quality of wool is not very good due to the high percentage of impurities estimated at 65 - 70% per head. The meat on the other hand is of a very good quality and that is why it is the most prized. The milk is not well utilized on native properties due to the fact that they keep the lambs with their mothers to a minimum of four months. On the Italian farms, on the other hand, very good cheeses of different types are made. Skins are also of a poor quality because of the primitive way of flaying.

(2) Goats There are two main types of goats, the indigenous type which is the most

common one and the Maltese type, which is hand fed in the oases for milk production. Generally speaking, goats are of secondary importance to sheep. They are considered together with camels as the most suitable animals to withstand the erratic climate and that is why no great loss in their numbers is recorded during drought years because they need less food and water and are not as readily exposed to diseases as sheep for instance. Generally speaking, goats are of good value to the native population. A goat gives about 1,000 grammes of milk per day and about 400 grammes of hair per annum, which is used in making tents and ropes. In addition, its meat varies between 8 to 15 kgs. per head.

(3) Camels Actually they are dromedaries and not camels since they have only one hump. Camels were of special importance in the past few centuries because of their use as the only means of transportation for the trans-Saharan trade. Nowadays they are mainly used for agricultural purposes, carrying heavy loads and riding. The average camel gives about 2.5 kgs. of hair, also used for the making of tents and ropes. It also gives an average of 4 to 6 kgs. of milk per day and the average meat weight is estimated at 300 kgs. The camel meat is of special importance during the winter seasons and it is mainly consumed by the lower income classes.

These three types of livestock are mainly owned by the native population and are mostly raised on the Jefara grazing areas. On the other hand livestock kept in the sedentary farming areas and raised by both the natives and Italians are cattle, donkeys, mules, horses and poultry.

(4) Cattle There are a few types of cattle. The indigenous type is mostly owned by the native population. This type is of a similar race to that found all

over North Africa, distinguished by their comparatively small size and their light red colour. Their use is mainly for lifting water from the wells. Meat and milk are also important. The average cow gives about 200 kgs. of meat and the milk production is estimated at 500 kgs. per lactation. In 1927 the Italians introduced a second breed called the Pantellaria. A few years later another breed known as Brown Swiss was also introduced. Results obtained from these foreign breeds are considered satisfactory. The average weight of these breeds is higher than the local one and the milk production is higher too with an average of 700 kgs. per cow per lactation. In recent years, very good results were obtained in both meat and milk by crossing local cows with the Zebu bulls from India. Efforts are now being made by the Nazirate of Agriculture to make full use of these new advantages among native farmers.

(5) Donkeys are mostly of local race distinguished by their small size. They are considered as one of the most important draught animals in the whole of Tripolitania. Their use is mainly for riding and carrying loads. The Italians also introduced in 1931 a new breed called Bagusa from Sicily. Crossing of this breed with the local race has resulted in some improvements in size.

(6) Mules are few in number compared with donkeys and horses and are mostly owned by the Italian farmers. Local climatic conditions proved that mules can be adapted and easily increased especially as they do not require as much food and water as the horses.

(7) Horses It is believed that the native horse is descended from the ancient Berber horse and lately mixed with the Arab horse blood. Generally speaking, the horses are the most prized animal despite the fact that they are only used for riding purposes among the native population, who regard a horse as a sign

of wealth and dignity. On the other hand the horse is a very useful animal on the Italian farm. It is used for agticultural purposes, drawing carriages and riding. In other words a horse is as fully used by the Italians as the camel by the natives.

(8) Poultry It mainly consists of the local race especially in the case of native ownership. This race is believed to be descended from the old Roman poultry and is mainly distinguished by its small size. The Italians also introduced some European breeds such as Rhode Island Red, Light Sussex and Brown Leghorn. The average weight of these breeds and their eggs are believed to be smaller than normal. Both old and new breeds are exposed to what is known as Newcastle disease, which is estimated to eliminate at least 25% of total poultry population when it occurs. Egg production in such years is just enough to satisfy the local demand but in good years there is always an exportable surplus.

Methods of improvement

It is almost certain that there are no mineral deposits in the whole western district, and so the improvement of livestock will be of vital importance to the agricultural development of the area. Therefore a few necessary precautions to ensure and increase this source of income must take place as soon as possible. The first step is that an adequate and reliable provision of water should be provided not only for the whole year round, but it also must be available all over the grazing area estimated as follows:-

Locality	Grazing area in hectares
Zuara	463,850
Sabratha and Agelat	59,019
Sorman	51,431
Zavia	57,710
Zanzur	16,130
Total:	648,140

In other words wells should not be further than 10 kms. apart. This can be done by reconstructing the former ruined wells, providing morewater in the present limited ones and also by digging new ones. This step will not only save livestock from travelling long journeys searching for water in the dry hot summers but it will also make a full use of grazing the dry herbage found on areas at present avoided due to their absolute lack of water. Secondly legislation should be issued to re-arrange the grazing areas. In other words no private or tribal grazing rights should exist. The influence of the tribe over grazing is perhaps excessive at the present time, and it may be that a form of collective grazing by an administrative unit is preferable. A third method is to increase the present veterinary services. So far there is only one veterinary surgeon in the whole western district. There must be one in every centre and fully equipped to cope with any of the following widespread diseases: sheep and camel pox, tuberculosis, brucellosis, poultry Newcastle disease, etc. Fourthly, present types of livestock can be improved by introducing new species already proved to stand similar climatic conditions as in South Tunisia, west of Australia and similar parts of the United States, and lastly wider publicity should be made explaining the importance of livestock as an inseparable factor in developing the general economy of the area.

References

(1) Survey of Land Resources in Tripolitania, Tripoli 1945, p.77.

(2) Report to the Government of Libya on Indigenous and Italian Farm Enterprises in Zavia Area, F.A.O. Rome 1954, p.35.

(3) Dr. Shanwani. Vital Statistics of Libya, Tripoli 1951, p.173.

(4) La Nuovu Italia D-Oltremare Rome 1933, p.501.

(5) Handbook on Tripolitania, Tripoli, 1946, p.83.

(6) Dr. Fastoratsa. Grazing in Tripolitania, Tripoli 1954, pp.3-6.

PART III

CHAPTER III

AFFORESTATION.

Forestry activities in Tripolitania were carried out until recently by the forestry division in the Nazirate of Agriculture, but from April 1957 this forestry division has been formally constituted into a separate department. The policy of this new department is to promote and develop a sound forest economy. The long term policy of this department is to provide protection for the intensively cultivated areas, which are always threatened by the moving sand dunes especially along the maritime zone of Tripolitania where at least one quarter of a million of these dunes are to be found. The aim is also to provide, in course of time, a sufficient supply of timber and fuel wood required for domestic consumption and industry. Moreover afforestation will help sufficiently to halt and control soil erosion, which has been greatly accelerated, in recent years, due not only to over-grazing but also to shifting cultivation and unplanned agricultural operations as well.

No progressive agricultural development is possible without these measures, sothe Italians, realising that no intensive indigenous or natural forests survive in the country apart from the scattered trees of Battoom, Talha and Sedra, began as early as 1915 to take increasing interests in afforestation especially along the coastal zones. In many cases the sand dunes needed to be fixed first and only when that had been done was it possible to plant trees. The Italian interest in afforestation besides being of agricultural importance was also to prevent drifting sand, which was a continuous menace to their lines of communication upon which both internal and external security depended.

Afforestation afforded protection from the sun and burning winds of the

summer and the conservation of the winter rains to mitigate the summer droughts. To fix the moving dunes, they are covered with a network of rectangles made by sticking dry grass into the sand. These wind-breaks reduce the transportation of the loose sand by the wind and enabled plants to take root.

The area afforested up to 1940 is estimated at 2,000 hectares in the whole of Tripolitania.(1) Under the Italians forestry activities were controlled by Milizia Nazionale Forestale or National Forestry Service. This Service was a purely military organization and unfortunately all of its records have been destroyed during the World War II. Under the British Military Administration, which lasted about seven years, only a total of 200,000 trees have been planted in an area of less than 400 hectares.(2) The British efforts in this field were primarily devoted to preserve and maintain the forests already in existence. From 1940 to 1952 the increase in the afforested areas was slow. On the other hand a considerable expansion in forestry activities has been recorded from 1952 onward. These activities are estimated to produce about 10,000 hectares by the end of 1956/57 planting season. Distribution of this area and the number of trees planted, during that period, are given below. (Figures obtained from the forestry department in 1959).

	1952/53	1953/54	1954/55	1955/56	1956/57	Total
Area afforested in hec.	700	655	2,200	2,848	3,645	10,048
Number of trees	437,500	409,375	1,375,000	1,780,000	2,278,125	6,280,000

Eucalyptus Canaladulensis, Eucalyptus Gomphocephala, Acacia Cyanophylla and

Ricinus Communis - caster oil plant - are the most successful species. Other plants include Prusopis, spineless Cactus and Pinus. The season of planting usually starts with the first considerable fall of rain. Information obtained from the forestry department states that the yearly planted area differs from one season to another according to the availability of rain in the planting season in both October and November. On the whole, the area is in the order of one thousand hectares a year.

Afforestation is of great importance everywhere in Tripolitania and the western coastal belt in particular. The reason is that most of the dunes here are located in a border area between the coastal oases, where the irrigated and extensive cultivated areas are to be found, and the Jefara plain to the south. Thus to secure these oases, which support nearly one fifth of the country's population, from the drifting sand from the south means that these vast and wasted areas of dunes should be fixed and afforested in the near future. This also will help greatly to protect this region from the burning summer winds from the south known as the Ghibli. In addition it will provide in time a wood supply, which is badly needed for fuel. Stabilization of the coastal dunes, from Sorman to Zuara, will also help to protect the nearby trees from the dominant north-east winds in the summer.

Generally speaking, as far as the western coastal region is concerned we find that the total area afforested up to 1959 is still very limited indeedif we compare it with the extensive areas of dunes. The following statistics obtained from the forestry department in 1959 may help to illustrate this fact.

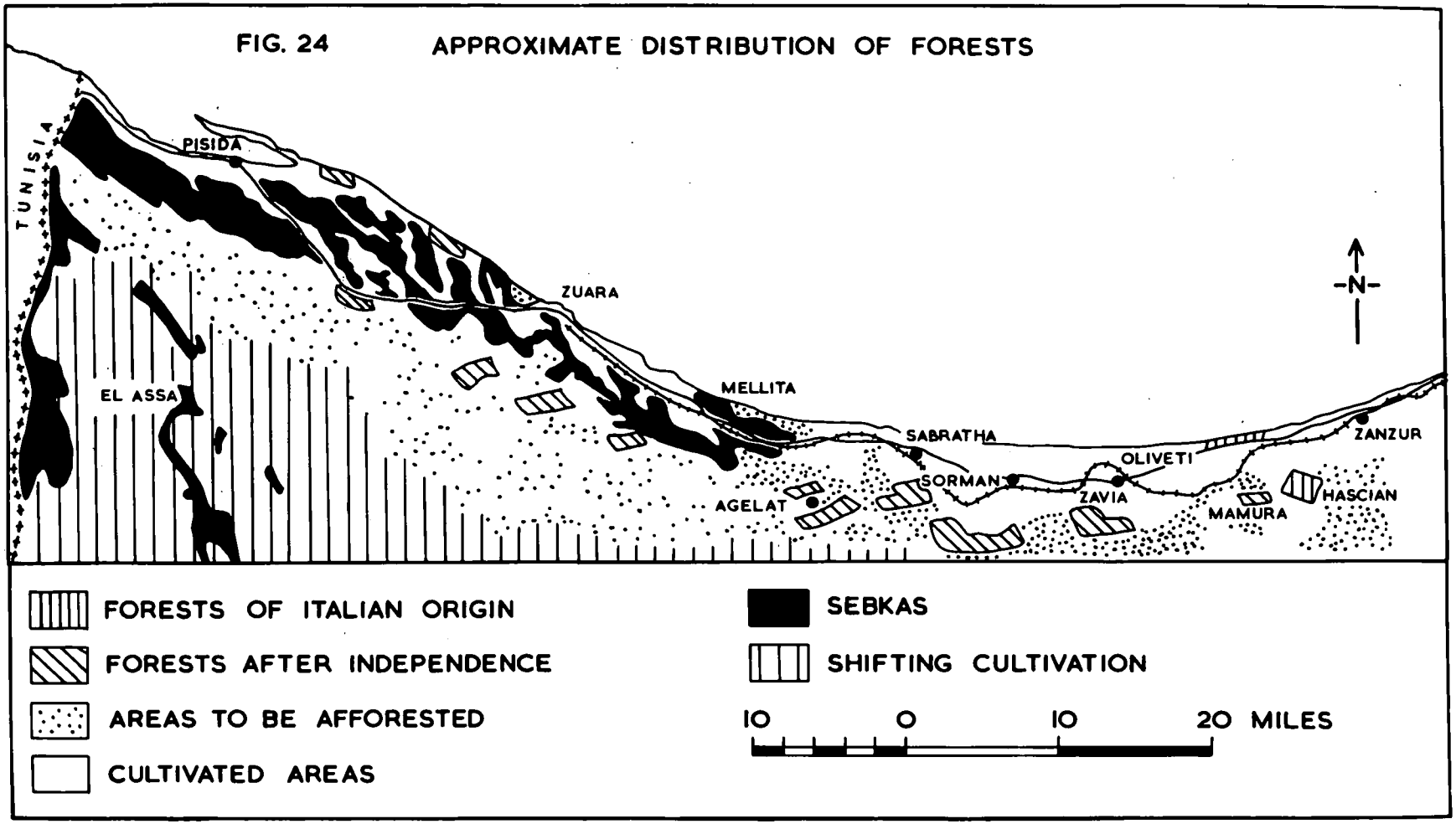
Locality	Area Afforested hec.	Area in dunes hec.	Notes
Zanzur, Hascian & el-Mamura	2,750	3,500	Forests in Hascian are of Italian origin
Zavia & Oliveti	580	1,500	Also in Oliveti
Sorman	1,350	4,000	After 1951
Sabratha & Agelat	950	5,600	After 1951
Zuara	1,300	13,800	After 1951
Total	6,930	28,400	

From the following figures we find that only 23% of the dune area has been planted. (see fig. 24). Comparing this planted area with the grand total of about 13,000 hectares in the whole of Tripolitania we find that the proportion of the western coastal region is over 50%. On the other hand, on the basis of the future forestry department planting policy, which gives this region only 40% of their yearly areas intended to be planted in the country, we find that a period of no less than half a century is needed to fix and plant the unforested area of about 21,000 hectares in this region alone.

There are no estimates of private forests in the western coastal zone. Broadly speaking, such an area is very much less than that of the state forests and consists of windbreaks and shelters mainly of castor oil plants.

No detailed maps are available for the distribution of forests in this region and the country as a whole. At el-Hascian we find the second out of four nurseries in Tripolitania. The production of this nursery for the season 1957/58 was about one million seedlings and the total for all the country was just over four million seedlings.(3) All of these seedlings were grown

FIG. 24 APPROXIMATE DISTRIBUTION OF FORESTS



individually and nearly all were potted in discarded tins.

From this picture of forests and afforestation in our western coastal region we must conclude that it is time that the individuals should share the responsibility with the state to fix and afforest the large wasted area found here. To do this, in my opinion, two main facts should be made quite clear to the public. These facts are: (a) The future development of most oases, with their increased population, depends upon future agricultural expansion south of this belt of dunes; (b) under the present financial resources of the state it is very unlikely that no more than one thousand hectares can be planted not merely in this region but in the whole country. Also the public must be made aware of the dangerous movements of these dunes on their present cultivated areas and on their health too. In other words a strong and efficient publicity campaign is required explaining that without a large scale of afforestation the agriculture, which is the base of life not only in this zone but all over Tripolitania, is seriously threatened by the drift of these dunes, and future developments curtailed.

To begin with every child at school should plant and take care of one tree each year as part of his education. This would stimulate interest in trees and increase knowledge about them which no doubt will help to encourage foresight. Secondly every holder of land should plant a few trees every year. Thirdly more propaganda must be devoted to the arbor day celebrations, which were started in 1955. In the celebrations of January 1958 a total of 24,000 trees were planted in that day by the school boys throughout Tripolitania. W.E. Marshall, director of forests, comments on this event as follows"The planting of 24,000 trees in one day is a most commendable effort apart from the public interest in forestry that is aroused by such tree planting

celebrations[4]". Personally I would like to see more stress given to the importance of forestry and trees in general not only once a year but the whole year round. Fourthly and finally state control is vital to protect the areas already afforested from both grazing and cutting the trees needs to be increased at present.

References

(1) Handbook on Tripolitania, Tripoli 1947, p.41.

(2) Land Resources in Tripolitania, Tripoli 1945, p.143.

(3) Annual Report of the Forest Department, 1957/58, Tripoli, 1958, p.17.

(4) Ibid, p.30.

PART III

CHAPTER IV

INDUSTRY

In view of the lack of mineral resources and of power and with the present limits on the ranges of labour and managerial skills, there is very little hope for any significant industrial expansion either in our western coastal region or in the country as a whole, unless immense changes are wrought by the discovery of oil.

Most of the present industries in our zone are of no great economic importance due to the primitive methods practised and also to their limited scope. The two main industries, which are of some economic significance, are sponge and tuna fishing and the olive oil industry. These two industries owe their real development to the Italian efforts, which intended to exploit the country's natural resources in order to make Libya "the Italian fourth shore".

Other so-called industries in this belt are restricted to some handicrafts, Laghbi and salt production and flour mills.

(1) FISHING

There are two different kinds of fishing practised in the western coastal zone and in Tripolitania in general. They are namely sponge fishing, which has been carried on by Greek fishermen for centuries and tuna fishing, which on the other hand is carried on by Italian fishermen. These two branches of fishing require high levels of skill, which at present is practically lacking among native fishermen and that is why the whole industry

is in the hands of both Greek and Italian citizens.

In the past the Tripolitanian sea has never been sufficiently fished for tuna. It was long believed that the biological life of the whole Mediterranean is somewhat meagre because of the high temperatures of its water, the high salinity and the lower nutrient salt content. Because of these facts it was commonly believed that the most important product of the Tripolitanian sea is the sponge. But in 1952 C.D. Servetis in his report on the "Fisheries of Libya" gave a different opinion in which he states "I have, after my 50 days stay in Libya, reached the conclusion that Libya - Tripolitania and Cyrenaica - can expect more returns from fish than from sponge."(1) This opinion is based upon the fact that, up to now, the Tripolitanian shores are practically neglected by the native population who have very little interest in exploiting the sea and are not drawn to fishing and navigation. However, it must be said that the Turkish authorities refused to give them fishing monopolies, while the sponge fields off the Tripolitanian shore were already partly or completely exploited since the beginning of last century by very capable and skilled Greek fishermen who were granted the monopoly of this industry by the Turks.

(a) SPONGE FISHING There are two seasons for sponge fishing. The first, which is the more important, is the summer season, which starts in March and ends in October. The second is the winter season starting from November and ending in February.

Broadly speaking, there are two main sponge species known as Hippospongia and Euspongia. These two species are subdivided into many other minor species Up to now there are no marked locations of the Tripolitanian sponge bearing

zones due to the lack of hydrobiological research. However these zones can be roughly located by the traditions and observations of the Greek fishermen, and lie from the coast line out to the depth of 70 to 100 metres. These zones in the case of our western coastal region are mentioned below as they are known to the Greek fishermen:(2) (1) Laspi bank at 83 miles north-north-east of Zuara; (2) Trafali bank at 17 miles east of the first zone; (3) Fondozzo bank at 75 miles north of Zuara; (4) Foro bank at 22 miles north of Ras Makbar. This bank is considered the most important bearing zone off the whole Tripolitanian coast. The main types of sponge found all over this area are the Honeycomb and Zimocca sub species of the Hippospongia. The existence of Zuara harbour in this region has played an important part in the production of these fields as a shelter during rough seas and also as a provision stage. (see plate XXIV)

There are no separate statistics to show the sponge production of this region simply because the fishermen do not stay permanently in one area and therefore the total catch is usually a mixture from different fields. Generally speaking, the Tripolitanian sponge industry is less important both in quantity and quality than that of Cyrenaica. However, the following data gives a general idea about the Tripolitanian sponge production:-

Year	Production (in Kgs)
1880	15,000
1900	66,050
1911	36,500
1947	15,000
1951	35,000
1957	41,000

There are several methods of fishing for sponges. These methods vary from the very simple and primitive to the very skilled and mechanized. The simplest way of collecting sponges is the one practised by some of the native people who after rough seas search the seashore to gather the sponges being torn from their attachments by the force of waves. The usual catch by this method is insignificant and does not exceed a few kilogrammes per season. Another simple method is by diving without equipment, but this system also brings a limited catch. A third method is by fishing with the sponge hook, but besides being very slow it also has the disadvantage of damaging the sponge. The fourth method is by using diving equipment. The divers, who are fully equipped with waterproof water suits, can stay a long time under the water and consequently can collect large quantities.

The number of sponge fishing trawlers, diving ships and boats varies from one year to another, but average about 100 of which about 50% are owned by Greeks, 30% by Italians and 20% by natives. The average yearly production of about 40,000 kgs. is distributed as follows:-
65% is produced by diving ships, 30% by trawlers and the remaining 5% is produced by the other means.(3)

Economically speaking, sponge fishing is of no direct importance to our western coastal zone as practically no one of this area is engaged in the operations.

On the other hand normal fishing is much more important as a great number of people benefit from it either directly or indirectly. In fact a number of families live entirely from the in-shore fishing, and also a considerable number work during the tuna fishing season; these are the two

main types of fishing.

(b) INSHORE FISHING

In the western coastal belt inshore fishing is practised by the native fishermen in the different scattered fishing stages from Zanzur in the east to Pisida in the west. In each of these stages there are a few fishing boats, mainly rowing and sailing ones. The distribution of these boats by stages is as given below, and the figures were obtained during a field work study in 1958.

Stage	Number of boats
Zanzur	4
Zavia	8
Sorman	3
Sabratha (marsa el Madina)	6
Sabratha (marsa el Zuaga)	4
Zuara	15
Pisida	18
Total:	58

The fish production varies according to the size of the boat, the number of crew and the method used. Generally speaking, this production is between 8 to 20 kgs. per boat per day. The method used, in most cases, is known as the trammel net. Also a great number of these boats use hooks and lines either simple or dragged. The cost of the average boat is about 200 pounds, the average crew wage is about 40 piastres (8 shillings per day) and the average

net profit per boat is about 500 pounds per year.

Besides this type of fishing there is, though legally prohibited, another means of catching the fish. The system followed is that two so-called fishermen sit on a high rock watching the movements of fish in the water. As soon as they see a considerable quantity of fish they light a stick of dynamite and throw it into the water. The explosion of the dynamite kills all the fish nearby and when this happens they start to collect it. This dangerous method has caused a large number of casualties among those who practise it.

The importance of in-shore fishing in the western coastal belt, as well as the whole coastal area of Tripolitania, is that firstly it provides a productive employment for a reasonable number of people estimated at 200 families in our region alone. Secondly it produces a valuable quantity of food, and finally it creates a source of trained manpower, which can be easily adapted to meet the needs of other highly skilled branches of fishing.

(c) TUNA FISHING

It is believed that a few European fishing companies have tried during the 19th century to establish Tuna factories in Tripolitania.(4) But no permission or monopoly was ever granted to any of these companies. The result was that apart from the native method of fishing by using small rowing or sailing boats, fishing as it is known today was completely unknown until a few decades ago. The change was brought by the Italians, who started operating in this field as soon as security was restored. The Italian term Tonnara covers both the factory and the fishing operation. Theoldest of these factories in our region is still found at Sabratha - marsa el-Madina. Another is found at Zanzur. (See plate XXV) The third and last of these factories has only been

founded at Zuara in 1956. Besides these factories there are a few other Tonnara installations, used only as fishing stages. They are found in Zavia, Sorman and marsa Zuaga in Sabratha. The catches of these fishing stages go to the three factories to be manufactured with their own catches. The average number of men employed is about 40 per installation and about 100 per factory.

The tuna fishing season usually starts from the end of May to the end of July. The tuna are caught in large long nets anchored from three to five kms. out to sea. The number of these tuna caught in this region varies from 2,000 to 7,000 a year. During the long fishing period some labour is also devoted to fishing for sardines which are found in moderate quantities. Sardines are also salted and canned at the same tuna factories.(see. fig. 25)

Broadly speaking, the tuna production of our region is about one third of the whole country. The following yearly production figures for the whole of Tripolitania are given as no separate statistics are available for our region alone.

Year	Production (in Quintals)
1951	21,292
1953	28,890
1955	11,700
1956	29,350

Most of this production is exported to Italy while the sardine production, which is far less than that of the tuna, is exported to Egypt.

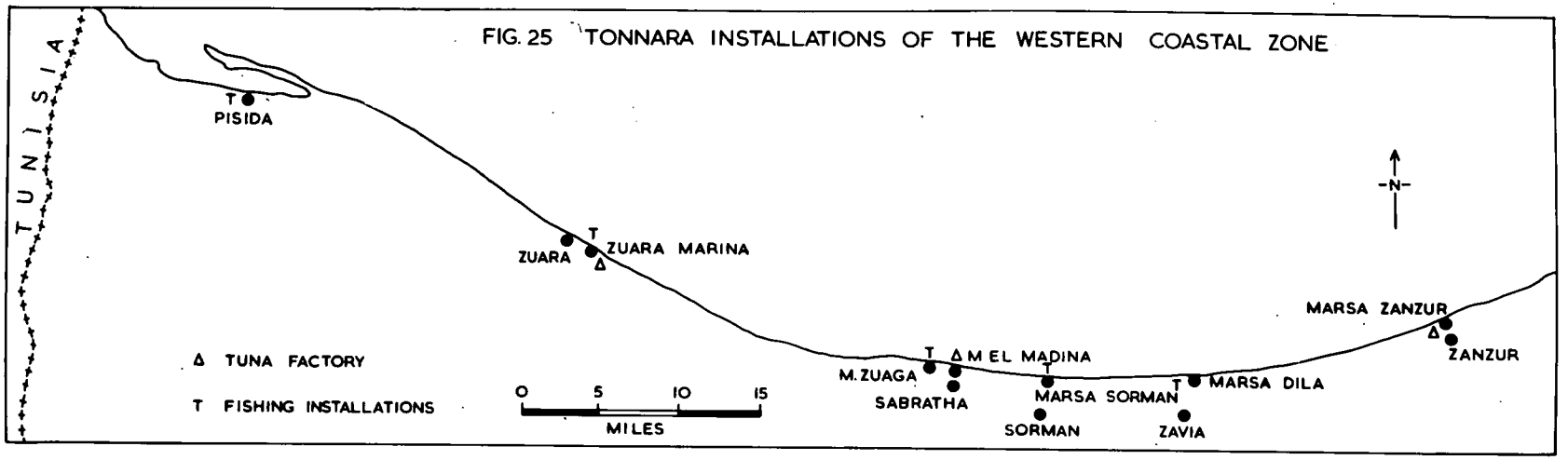


FIG. 25 TONNARA INSTALLATIONS OF THE WESTERN COASTAL ZONE

Improving and expanding both tuna and sardine fishing as well as the associated industry will be of great economic importance since they constitute a source of employment and foreign exchange. As far as our region is concerned there is a surplus idle manpower, which can be easily engaged in such operations. Moreover this region is one of the best areas for providing the olive oil and salt needed for such an industry. Industry is lacking here and the development of this coastal belt will depend on the expansion of the present agricultural methods and areas with the few industries of which that of Tuna is of great value.

(2) OLIVE OIL

The history of olive oil in Tripolitania goes back as far as a few centuries before the Christian era. Olive trees were first introduced by the Phoenician colonists. After the decline of the Carthagian rule and the coming of the Romans the olive trees were of great importance and it is not surprising to know that olive oil was the only certain product that was exported in large quantities to ancient Rome. Under the Arab and Turkish rules, mainly because of lack of economic security, the planting of new trees and the care of the adult ones ceased and the result was that large olive plantations, along the coast and the Jebel, were devastated and consequently the oil production decreased drastically. Such conditions remained unchanged until the comparatively peaceful conditions of the end of last century when some slight improvement took place, and a few new trees were planted especially along the coast. There is no available data

regarding the number of trees and oil production before the Italian conquest in 1911.

In the case of our western coastal zone the following statistics show the number of trees and oil production in three different years.

Year	Number of trees	Approximate production in Tons
1930[5]	62,428	16
1946[6]	801,212	30
1957	198,473	100

About 40% of the trees enumerated in 1957 are non-producing due to their recent planting and most of this percentage is found on the Italian farms. The distribution of the 1957 figure also can be classified by ownership as follows:- 114 thousand owned by indigenous farmers, 50 thousand owned by Italian demographic settlers and the remaining 34 thousand are found on private concessions.

Before the Italians began to erect modern oil presses the natives used to press their olives in animal or manpower presses. These presses, which are still to be found all over the region but are practically out of use, do not produce the same quantity of oil as compared with electric or diesel presses simply because the olives are not pressed enough and consequently they give a smaller yield.

In 1957 there were a total of 62 modern oil presses in our region distributed as follows:-

Locality	Number of Presses	Approximate Production in Quintals
Zanzur	25	904
Zavia	14	4,897
Sorman	7	1,146
Sabratha	7	1,631
Zuara	9	1,040
Total:	62	9,618

The increase in both the number of olive trees and their production is due to the fact that the Italians esepcially from 1925 onwards have concentrated on planting thousands of trees. The 1946 figure, which is given in the Handbook of Tripolitania 1947, is in my opinion much exaggerated and does not correspond with the actual figure of 1957 which was obtained from Zavia Agricultural Statistics Department.

The Italian olive trees are, in most cases, of different species to those owned by the native population, but they are found to be not well suited to the local climatic conditions and provide comparatively smaller yield. Consequently the Nazirate of Agriculture is trying to stop further planting of these species and instead encourages planting local plants.

There are a few local varieties of olives. These varieties are the most appropriate to stand the climate and that is why their fructification is very quick. The following are the most common local varieties: the Induri, the Garrasi and the Chemlali. The last type is of Tunisian origin and it has been found the most favourable as it very rarely fails to yield and it also gives higher yields. Caratina and Frantoio are amongst the most common Italian varieties.(7) As regards production the indigenous varieties fructify more rapidly and give a greater amount of oil but on the other hand, it appears that

the Italian species produce a superior quality of oil. (see plate XXVI).

Olive oil is of great importance in the whole of Tripolitania not only because of the lack of other vegetable oils but also because of its great demand in the world market. Libyan production is estimated at 3,000 tons per year of which there is always an exportable surplus, averaging 1,000 tons per year. This surplus is always exported to Italy as a result of the Gatt commercial treaty among the olive oil producing countries. Economically speaking this treaty is against the interests of the Tripolitanian farmer because Tripolitanian oil is not of high quality as compared with that of Italy where modern oil refineries are to be found, and where oil prices are higher. Tripolitanian oil goes to Italy to be refined and re-exported despite the fact that Italy is one of the best olive oil producing countries. In my opinion the Tripolitanian oil, which amounts to about 12% of the total exports, should be refined locally, and then exported or the Gatt treaty must be changed, which will allow new markets among the other non-producing countries which offer higher prices than Italy.

In the western coastal belt the olive oil industry provides a seasonal employment for about 800 factory employees for a minimum of four months a year. It also provides work for many thousands of young native people on the Italian farms during the harvesting season. Besides, it gives part time work for many hundreds of families who possess olive trees. Among a great number of these families especially indigenous ones the olive is considered very valuable cash crop. They market a certain quantity every week and with its return they do their shopping. In other words it is true that the olive trees are the most desirable trees to be owned by the indigenous farmer and as far as the Italian farmer is concerned we find that the olive was the foundation upon which the

Italian agricultural colonization was built. Therefore by more publicity and more agricultural credits it is very likely that the total figure of olives in our region can be easily doubled in less than two decades, which no doubt will increase the farmers' incomes and provide more industrial employment for many thousands. If such expansion takes place it would also seem desirable to treat the local residue, from the present presses, to secure additional extraction, which can be used for a future soap industry. The remainder can be used as a fuel for burning, as a concentrate for livestock or as a fertilizer.

(3) HANDICRAFTS

Apart from the two small industries mentioned above our region has, indeed, very little to offer. Most of the local handicrafts are usually carried out by women in houses. Of these, perhaps the most common one is the manufacture of the Holi-barracan which is used for men wearing and also as blankets.

Broadly speaking, Tripolitanian wool is of low quality due to the absence of proper methods of preparing it for export and that is why it is virtually unknown in foreign markets. It is estimated that less than 30% of Tripolitania wool is exported.(8) The rest is consumed by local handicrafts and small industries, mainly in Tripoli city and Misurata, in the manufacture of various types of carpets and rugs both for domestic use and export, blankets and barracan. In the western coastal belt such manufactures are restricted to the barracan manufacturing, which is, in most cases, carried out by poor families. These families buy the raw wool, wash it, weave it and make it into barracan. The usual profit of making one barracan is very small indeed and never exceeds three to five pounds in spite of the fact it takes no less than a month to make it. Another similar handicraft is the making of tents, which is quite common in the western part of our region. There is much

similarity in the methods of making both tents and barracan, except for the difference in the raw materials, as tents are generally made from goats hair. These two handicrafts are, as mentioned before, carried out by women.

On the other hand men of similar standard of living make ropes and baskets from the young leaves of palm-trees. Also they go to the Jefara and collect the esparto grass and make of it what is locally known as Hasira used instead of beds for sleeping purposes.

Other handicrafts are the making of wood ploughs and tools for Arab agricultural purposes, blacksmithing and shoe making in small individual shops. Charcoal is in great demand due to its wide use for cooking and making the Shahi-tea. The wood of one adult olive tree or one eucaliptus produces approximately one ton of good charcoal. The method used is by cutting the wood into pieces, putting it inside a small pit, lighting and covering it with clay. After two to four days and when the whole amount is burnt they open the pit, take the charcoal and expose it to the weather for a few days until it is dry and ready for use. A similar method to this is also followed in making el-Jir, whitewash. The only difference is that instead of using wood as raw material they use calcrete. The Jir is used in building purposes by mixing it with cement or sand. Also it is used for decorations and painting the walls white.

(4) LAGHBI

Dates are the principal fruit of our western coastal area and they constitute a stable food for at least half of the native population. The interest in these trees from an industrial point of view is in the making of alcoholic drinks whether from the dates or from the tree itself. There are

two kinds of these alcoholic drinks, the first is obtained from the dates by fermentation and is called Bukha. During the war there was a factory in Zavia for this industry. The failure of it was due to the high competition of similar factories in Tripoli city. No such factory now exists in our region. The other alcoholic drink is called Laghbi and it is widely consumed by the natives because of its cheapness. (see plate XXVI) The Laghbi is less intoxicating than the Bukha, which is mostly consumed by the Jews. It is obtained by extracting the sap of the tree trunk. (see plate XXVII) The average tree gives about 800 litres in about 30 days. Such used trees usually take 3 to 5 years to rebear fruits and if it dies the trunk may be used for timber and fuel. A minimum of two thousand trees are cut for Laghbi every year and the production besides being consumed locally is also sent daily to Tripoli city, especially in the case of Zanzur and Zavia.

(5) SALT Collecting the salt from the huge Sebkas in the western part of our region has been of minor importance during the last few decades. The reason is the competition of those artificial saltpans east of Tripoli city, which produce a cheaper and better quality of salt. To protect the production of Tripoli city nearby saltpans the government prohibited the collection of salt from the Sebkas of our region. On the other hand these Sebkas were of great importance during the 18th century when the monopoly of this industry was granted to merchants from both Venice and Genoa in Italy, as has been mentioned by Reclus in the II volume (p.144) of his work on World History. Nowadays the salt of our region has no economic importance and it will remain so until further steps are taken to increase the salt exports.

(6) FLOUR MILLS AND BAKERIES

The use of flour mills, on a large scale, is of a recent date. Ten years

ago, for instance, it was completely the women's duty to provide flour, whether wheat or barley, at home. Now the situation has changed due to the improvement in the status of women and we find that over 80% of the flour consumed is produced by flour mills. Of the quantities manufactured in the flour mills of our region it is estimated that 70% is for direct home consumption and 30% for bakeries. Each flour mill is estimated to manufacture 8 quintals per week. The following statistics show the distribution of the flour mills in our belt.

Locality	Number of Mills
Zavia	8
Zanzur	3
Sorman	6
Sabratha	2
Agelat	2
Zuara	6
Total:	27

The term bakery, in our region, means only the place where bread is made. The total of bakeries in this area is about 25 and nearly half are found at Zavia town. The average quantity of flour used per bakery is estimated at one and a half quintals per day. Bread of these bakeries faces a high competition from the bread brought daily from Tripoli city and that is why the manufactured quantity per bakery decreases at both Zanzur and Zavia and increases west of Zavia where Tripoli's bread is only sold on market days. Generally speaking, only small quantities of flour are manufactured into bread because nearly 30% of the bread consumed daily is home made. Both flour mills and bakeries employ about four men.

Beside these industries, found in our region, we may add quarrying,

tanning and wine making. Quarrying is carried out near the sea shores, and is mainly of limestone bricks, used for building purposes. (see plate XXVII). However, this industry is very limited due to the fact that the natives prefer clay because it is cheaper and can be quarried on the spot. (see plate XXIX).

Tanning, in its widest meaning, is not known in this region, but some people, mainly butchers, keep the skins of the animals they slaughter and buy some others in order to salt, dry and sell them in Tripoli city.

Wine making is totally in Italian hands, mainly farmers, who during the grape harvest, make their own wine for home consumption. Also in Zavia town there is a small factory for soft drinks owned by an Italian. However, the production of this factory is limited indeed and furthermore the quality is not good as compared with those from Tripoli.

Thus we end this industrial summary, and once again we must bear in mind its very limited contribution to the area's economy.

The following statistics showing the total of non-agricultural licences, or in other words licences of industrial and commercial significance, illustrate this point. Figures were obtained from the municipalities of the region in 1958.

Locality	Total Licences	Commercial Licences	Industrial Licences
Zavia	540	440	100
Zanzur	220	180	40
Sorman	149	119	30
Sabratha	120	105	15
Agelat	149	127	22
Zuara	300	250	50
Total:	1,478	1,221	257

These figures, which do not include the Tuna industry, are obviously very limited and the result is that if we assume that each of these industrial licences gives employment to four persons we come to the conclusion that less than 1,300 families or about 7,000 persons or less than 5% of the whole population of the area are affected by industry.

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(1) Fisheries of Libya, Tripoli 1952, p.1.

(2) Ibid, p.7.

(3) The Economic and Social Development of Libya, New York, 1952, p.50.

(4) Libya under the Second Ottoman Occupation, Tripoli 1946, p.172.

(5) Attivita Di Neorizzaziore Agraria in Tripolitania, Rome 1930, p.25.

(6) Handbook on Tripolitania, Tripoli 1947, p.82.

(7) Orcharding in Tripolitania, Tripoli 1954, pp.32-47.

(8) Report to the Libyan government on the Development of the Wool Industry, Tripoli 1951, p.1.

CONCLUSION

It is clear that the western coastal zone of Tripolitania is predominantly agricultural. Many physical and human factors including soils, water resources, rainfall, tribal influence and illiteracy have reduced the area's agricultural productivity as compared with other Mediterranean countries. Low productivity combined with scarcity if not absolute lack of mineral and industrial raw materials have created a very low standard of living for the majority of people. This is well marked in many different aspects of the social life such as the low degree of literacy and the prevalence of diseases. Strict Moslem beliefs, especially as regards the rights of women, have also helped to reduce the region's productivity as most of the work is carried out by men. The low social status of women also influences population growth - both birth and death rates are partly caused by the illiteracy and backwardness of most of the mothers.

Among other factors which have helped to keep the whole country backward is the long duration of foreign rules and the ignorance of the intruders to the country's needs. The Italians for example achieved tremendous agricultural progress without which the present economy would be primitive indeed. But at the same time the full purpose of such a scheme was for the benefit of their race without any regard to the natives. The primitive ways of farming still carried out by the indigenous population illustrate that the Italians were not interested in improving on the native ways of life. The insignificant standards of health and education of the natives under the Italians are further illustrations of Italian ignorance to the indigenous requirements.

The Turks, on the other hand, did not take any interest in developing the

country. On the contrary, life was more or less a continuous war and struggle between the different tribes. It is perhaps the demolition of the tribe as a social and racial unit in the late 1890s which will be remembered as the best thing the Turks did. Unfortunately the new system introduced by the Turks did not survive long except in the city of Tripoli. Elsewhere the Italians, who proclaimed that it was the peoples' own desire, abolished the new system, which was based on dividing each locality into four to eight Mahalla - quarters - each headed by a Mukhtar. The result of the Italian action was the return to the tribal system.

Reliable authorities confirmed that tribal influence in Zavia, for instance, had decreased enormously under the Mahalla system. The reason is that four to six different racial tribes were joined together in one sub-administrative unit. In my opinion the Mahalla system has to be revived as soon as possible. Different tribes should combine to form a new Mahalla in which the tribe becomes only a Lahma - family group. This will help to completely abolish tribal influence.

The success of this new system, in our region, is almost entirely certain for many reasons of which first is the increasing enlightenment of thousands of people through modern education, secondly the stable economic situation, thirdly the cessation of struggle between the semi-nomads and nomads on one hand and the settled population on the other, and finally the increasing interest of the public in any development schemes. Many local authorities in different parts of this zone have been questioned about such a plan, and fortunately all of them were very anxious to put this idea into practice in the near future.

The new system will help to effectively organize many aspects of the present

confused social life. It will increase co-operation in agriculture, industry and commerce. It will also facilitate intermarriages. Finally, it will undoubtedly increase public interest in development simply because the individuals will begin to think and care about a larger and bigger human unit than the ones they used to care about.

Vital registration will be easier than under the tribal system as the Mukhtar, who will be a paid government official, has greater responsibility than the Sheikh.

Greater governmental attention to agricultural development, whether indigenous or Italian, will certainly increase the farmer's income and help to achieve a better standard of living. At the same time attention should be paid to a wider spread of education, especially agricultural education. More hospitals, dispensaries and of course doctors should be provided. The establishment of new settlements wherever possible will definitely increase the area cultivated and also alleviate the problem of over population in some oases, for example Zavia. Moreover attention should also be devoted to further afforestation not only to stop the movement of sand dunes but also to protect the region from the burning Ghibli winds. In course of time, it will also provide a further supply of fuel, which is badly needed.

The socialand economic development of the Western Coastal Zone of Tripolitania therefore involves the following tasks:

(1) Surveying both underground water resources and soils as basic data for any agricultural development and expansion.

(2) Introducing more suitable species especially in the cases of livestock, fruit trees and cereals.

(3) Expanding on the former Italian co-operative societies.

(4) Providing adequate agricultural credits.

(5) Improving on both olive oil and Tuna industries.

(6) Establishing a modern oil refinery at Zavia town.

(7) Expanding and improving on both education and health standards, which are not only an urgent necessity but are also vital for future developments.

(8) Attention to reorganize and modernize the present statistics departments both in the municipalities and in agricultural departments. Plans for future development depend upon the study of the exact trends of population and the capacities of the different income resources, of which agriculture is the spinal cord of the economy of the western coastal zone.

(9) Replacing the tribes by the Mahalla system.

(10) Wider governmental publicity for any development plan.

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SUMMARY

The Western Coastal Zone of Tripolitania is an area of Quaternary deposits dominated by a Mediterranean climate. Agriculture is the main source of income for the majority of its population, estimated at nearly 135,000 of whom a small minority are Italian farmers mainly in the Oliveti area. Industry and commerce are carried out on a very small scale because of lack of raw materials and investment.

Future developments are undoubtedly reliant on further improvements and expansion of the present methods and areas of cultivation. To overcome such a complicated problem, which reflects the low standard of living, efforts should be made to spread education and improve on the health standard on the one hand and to make a full use of modern agricultural techniques in order to raise the regional productivity and enlarge the limited oases on the other hand. In other words it is essential to found new settlements similar to those founded by the Italians, not only to increase the cultivated areas but also to reduce the population density. More attention to livestock is also a vital step, and expansion on the present limited industries will certainly help. Eliminating the tribal influence or at least reducing its present effect is the key or the background to any successful developments. Therefore, an approach and a solution to this chronic problem are vital if there is to be any sound economic and social development for nearly one fifth of the total population of Tripolitania.

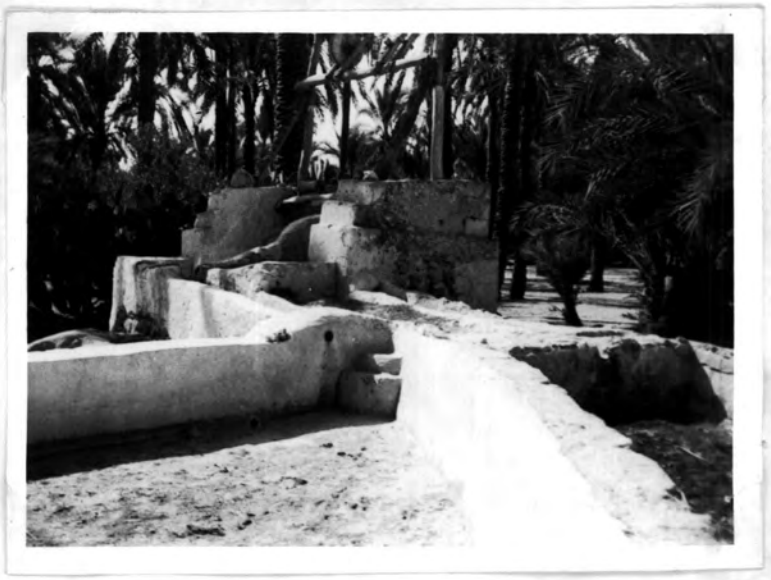
Plate I

The Dalu, the water lifting bag, Zavia.

Plate II

Cows provide the water lifting power, Zavia.

Plate III



A typical well with two storage tanks, Zevia.

Plate IV

Wind mills are also means for lifting water, Sorman.

Plate V

Concrete ditches are practically confined to Italian farms, Oliveti.

Plate VI

Sprinkler irrigation system.

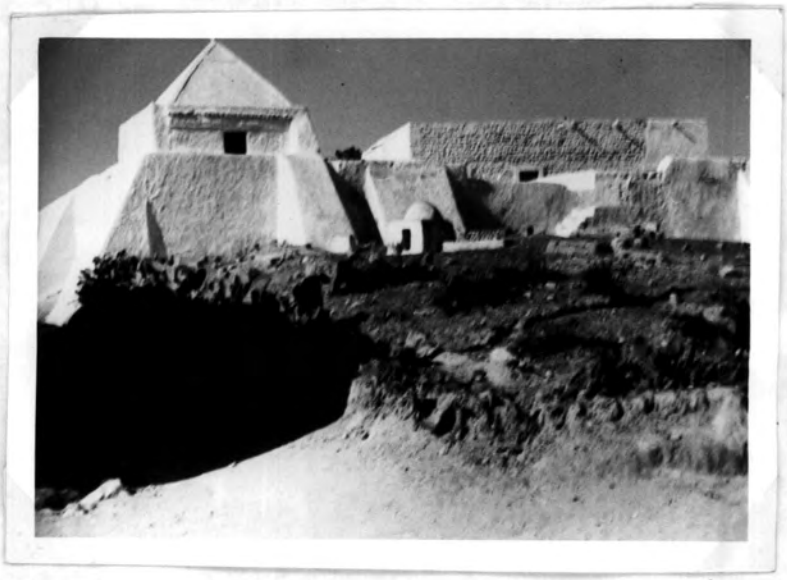
Plate VII

Part of Zavia Eye Hospital

Plate VIII

The tent and the camel are always essentials for semi-nomads, Agelat.

Plate IX



Sidi el-Beshet, the Seed of el-Hara growth.

Plate X

A plot of two Italian houses, Zavia.

Plate XI

The main water reservoir in Zavia

Plate XII

The main road in Zavia

Plate XIII

A typical Native garden with the house and the well at its centre, Zavia.

Plate XIV

A typical Native house in Zavia with the cow kept nearby

Plate XV

The Zariba is a common dwelling type for Natives, Zavia.

Plate XVI

The main square in Zuara

Plate XVII

The administrative centre or the Kaimmakamia in Sabratha

Plate XVIII

A typical railway station, Sabratha

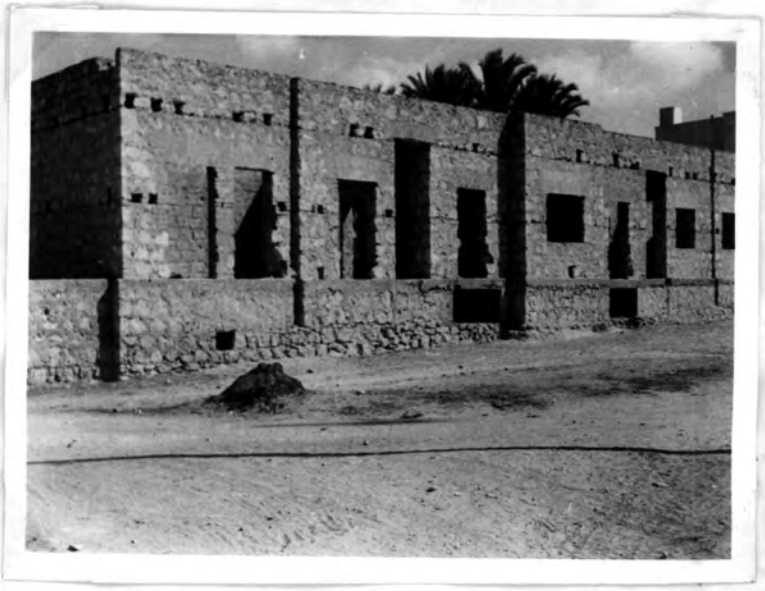
Plate XIX

Sabratha modern market

Plate XX

Part of the famous antiquities of Roman Sabratha

Plate XXI



Stone and cement are the main Italian building materials, Oliveti.

Plate XXII

Cows and horses with wooden plough for native ploughing

Plate XXIII

Manure is provided locally by most of the Italian farmers, Oliveti.

Plate XXIV

Zuara harbour with both fish and sponge boats

Plate XXV

Zanzur Tuna factory, Zanzur.

Plate XXVI

Lagbi juice is a common drink, Zavia.

Plate XXVII

Preparing the palm tree for lagbi production, Zavia.

Plate XXVIII

Limestone quarrying, Tellil-Agelat.

Plate XXIX

Clay is the main material for the construction of Arab houses, Zavia.