Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

50X1-HUM

MILITARY GEOGRAPHIC DATA ON LIBYA

Militargeographische Beschreibung Von Libyen, Jan 1948

10 August 1950

CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

~~RESTRICTED~~
CONFIDENTIAL

MILITARY GEOGRAPHY OF LIBYA

A. GENERAL INFORMATION

1. Arrangement of material treated herein

This military geography of libya presents a summary of the natural features of the country which are of great military significance.

The description of the individual sections of the country gives details only on those regions in which military operations might be likely to take place. The desert areas are described only briefly.

The description starts with the coastal area of Northern Libya and is followed by a discussion of the southern regions, with the emphasis on the individual groups of oases. Then follow brief orienting descriptions of the most important cities and ports.

Part D, which gives detail data, describes the most important roads.

2. Territorial divisions of the country

Libya contains two narrow, steppe-like coastal areas, separated by the Gran Sirte, [redacted] a 650 km expanse of desert land, and the huge Libyan desert with its sporadic oases.

These three parts are not of equal importance.

The economic and political centers of the country are its two "islands of culture", Tripolitania and Cyrenaica. Only these regions have sufficient rainfall or ground water to allow habitation. In Tripolitania, the steep rim of the desert plateau, the [redacted] JABAL NAFUSA, recedes from the coast, and is replaced, West of Tripoli, by a broad [redacted] JAFARA coastal plain. The [redacted] JAFARA is a steppe like which resembles Eastern Tunisia. Cyrenaica is a high limestone plateau which abruptly ends at the sea in several [redacted] gradients, breaking off from the Jabal [redacted] AL-AKHDAR, and slopes gradually toward the South where the steppe rapidly turns into semi-desert and desert.

Even these regions are at a disadvantage, as compared to Algeria and Tunisia. The French part of the Miditerranean coast of Africa is much more humid and thus lends itself better to agriculture. In Tripolitania and Cyrenaica, on the other hand, habitation prior to Italian colonization was almost entirely restricted to a series of coastal oases. The Italians extended habitation also to the steppe. Even in these areas, climatically the best in Libya, the water question is of the utmost importance. All military operations in these areas depend on the water supply.

CONFIDENTIAL ~~RESTRICTED~~

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Tripolitania and Cyrenaica are sharply separated by the desert-like area along the Gran Sirte. The good Italian-built coastal road ("Litoranea") is the line of communication between them. It is essential to all operations in eastern Libya.

The entire Southern Libya is desert extending beyond the 20th parallel. The only means of subsistence there is provided by scattered oases or groups of oases, which are the bases for the caravan and motor routes leading to the Anglo-Egyptian Sudan. Although these routes had not yet been developed for regular traffic at the outbreak of the war, it is only a question of time. At present, it is already possible to cross the Libyan southern frontier into French West Africa and French Central Africa.

The southern portion of Libya has no great economic importance. The number of natives and Europeans living in the oases is small, as compared with the size of the area. The eastern section of southern Libya, with the oasis group of Kufra, constitutes the Libyan Desert proper. The western sector is called Fezzan; it contains more oases and is equipped with a better developed communications system than the Libyan Desert.

The Tibesti highlands rise at the southern frontier of Libya. They are an extended mountain region with altitudes in excess of 3,000 meters in the Central Sector. The Italian portion of this mountain range is limited to the northern edge.

3. Types of terrain and condition of the surface

The whole of Libya is a desert plain divided into various plateaus by steep rocky shelves. Isolated massifs rise from the completely flat or slightly rolling plateaus, reaching altitudes up to 1,000 m., such as the Jabal [redacted] (Al-Hamada) the [redacted] massif, and in the South the foothills of the Tibesti range, the central portion of which lies in French Equatorial Africa. The plateaus are cut by dry valleys (wadis) which are at first shallow, but become deeper as they approach the rim of the plateaus.

The passability of these areas is determined by the location of the plateau shelves, the steep banks of the wadis, and the condition of the surface of the plateaus.

The shelves, rocky and sometimes several hundred meters high, are an obstacle which can be negotiated by motorized columns only at very few points besides the artificial roads.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The passability of the plateaus, especially by motorized columns, depends on whether the surface consists of rocky, gravelly, or sandy desert. Their distribution is shown in Map 2.

The main desert types are classified as follows:

A - Rocky deserts (Hamada). In Libya they consist of limestone, sandstone, or basalt. The natural ground, sometimes covered only by a shallow layer of decomposed rocks, is studded with rock fragments from fist to head size, located at irregular intervals. The fragments have sharp edges, and especially those of sandstone are usually colored black by crusts of iron. The wadis running through the Hamada regions have steep banks. Despite their solid terrain, it cannot be expected that they can be [redacted] Crossed by motor vehicles unless the rock debris has first been removed. In addition to the roads specially built for motor vehicles through these regions, there are also caravan paths which are narrow and often run next to each other, several at a time.

B - Gravelly deserts ([redacted] Serir). They consist of loose, fine-grained to dusty soil, interspersed with coarser sand, gravel and pebbles. The coarser material is accumulated at the surface. The gravelly deserts are flat or slightly rolling, and often cover large areas. Since the ground is more solid at the surface, they can be traversed in all directions, even by heavy trucks. Motor vehicles crossing this area leave shallow tracks in the ground. The wadis are often shallow and can be crossed easily, but some of the wider ones have such steep banks that even camels have difficulty descending them.

C - The sandy deserts may be classified as follow:

1) Sandy regions consisting mainly of course grains of sand 2 to 3 mm in diameter. The sand is solidly packed, and its surface has ripples only 3 to 5 cm in height. In general, these regions are passable, but there may be sections of loose fine sand between the areas of course sand, so that reconnaissance is required. Tracks remain quite visible.

2) The flat solid sandy areas often containing long isolated series of dunes, frequently only a few hundred meters wide and 20 to 30 m high, consisting of fine drifted sand. Palm trees sometimes grow on them. The dunes are not passable, but can usually be detoured.

3) The great dune deserts (Erg, Edeyen) which offer great obstacles to motor communications. Large portions of these deserts consist of dunes up to 100 m in height with a core of solid, coarse sand. The finer sand above this core is

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

blown back and forth by the wind and arranged in rows of lower dunes. Valleys 100 to 150 m wide lie between these dune mountains. The valleys are covered by sand or [redacted]. They are cut into basins by transversal dunes (up to 50 m high and several meters wide), the result being a desert consisting of a criss-cross of dunes, impassable for motor vehicles. Stunted shrubs usually grow at the rim of the basins, providing food for camels.

D - The beds of the wadis, several hundred meters to several kilometers wide, have peculiar characteristics. After downpours, which are very rare - in the interior of the desert they occur only at intervals of several years - they fill with water, but dry up again very quickly. The wadi beds are generally impassable for motor vehicles for two or three days after such downpours.

The wider wadis are lined by palm trees which usually grow in drifted sand which runs in low strips and sometimes forms dunes. Salt clay ground (Sabkha) occurs between these strips. The salt clay is either covered by sand, or is bare. The bare salt clay is covered by numerous cracks which reach the width of a hand during the dry season. After rainfalls, however, the ground becomes slick and muddy. The gray salt clay often contains so much salt that the upper crust, 10 to 20 cm thick, has cracked into hard lumps which then have moved in all directions and stood upright, so that the terrain is almost impassable even on foot. At deeper points, where water will sometimes remain above the ground for a few days, white salt crystals form after its evaporation. The Sabkha regions near the coast are frequently flooded after the winter rains. Some wadis are covered by white gypsum crusts with a loose surface, especially above sand or sandy clay ground. The larger basins (e.g. Giofra) also contain hard gypsum crusts which either lie flat or in hilly wave forms, or have cracked into lumps like the salt clay crusts of the Sabkha regions.

When judging the terrain as to its passability, outside the marked paths, it should be pointed out that clay and crusty grounds are frequently deposited in the coastal regions by the regular, although slight winter rains. They first appear safe, but may be very dangerous to truck traffic. When driving through the desert or the semi-desert areas which are covered by thin tufts of vegetation drivers should be on the lookout for such spots which can usually be detoured easily.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

4. Climate

The coastal regions of Libya are characterized by hot dry summers and mild winters. Most of the rainfall occurs during the winter months. Toward the south, the yearly amount of rainfall decreases rapidly. Thus a division between a season with plentiful rain and a season with little rain does not apply to the interior of the country. These areas are marked by constant dryness, hot summers, and warm winters.

The temperature fluctuates least in the coastal areas, due to the influence of the Mediterranean Sea. In Tripoli, where the mean yearly temperature is 19.7° C, a mean temperature variation of 14.2°C was found between the coldest month, January (12.2°C), and the hottest, August (26.4°C). At Bengasi, where the yearly mean is 20.5°C, the variation is only 12.8°C (January 13.5°C, August 26.3°C). Despite these slight yearly variations in the coastal areas, however, the temperature occasionally rises above 45°C and drops nearly to freezing during particularly severe winters. The daily variations, too, may be very great, if the wind changes suddenly. Daily variations of 20°C have been recorded at Tripoli.

If the mean July and August temperatures at Tripoli and Bengasi are compared with the summer temperatures recorded in Italy, it is found that they coincide fairly closely with those measured at Catania, Palermo, and Syracuse. During the other seasons, however, the deviations are greater. Fall and spring in North Africa are much milder than in Italy. While the mean summer temperature is hardly 1°C above that of Catania and Syracuse, the preceding and following months in Tripolitania and Cyrenaica are as much as 4°C warmer.

Between April and October northeasterly winds prevail in the Jafara of Tripolitania and northerly winds in the coastal plains of Cyrenaica. The cool sea breezes reduce the summer heat, although they do not bring rain. The sky, during the summer months, is constantly an almost completely cloudless blue. The daily insolation is considerable, and evaporation reaches its maximum. However, due to the high heating of the air during the day, the relative humidity does not exceed 60 or 70 percent at Tripoli and 60 to 63 percent at Bengasi.

While the humidity of the air often becomes an oppressive sultriness, saturation and rain do not occur during the summer months. As a result of intense radiation during clear nights, dew and fog will form. The fog sometimes does not

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

lift until the late morning hours.

The mean yearly precipitation at Tripoli is 382 mm. On the average, the city has 54 days of rain per year. As is characteristic also in other dry regions of the world, the rain falls in the form of brief, violent downpours. Sometimes a considerable portion of the entire yearly precipitation falls within a few hours. During the rainy winter of 1925-26, a rainfall of 64.7 mm was recorded at Tripoli during one single day, while Zuara, further west along the coast, received 94 mm.

East and west of Tripoli, the amount of precipitation slowly decreases. SURMAN, west of Tripoli, and Misurata, to the east, both receive approximately 250 mm. In the Tunisian frontier and Syrtic regions the amount of rainfall is even lower. Only in Cyrenaica do rainfall conditions improve again. There the amount of rain is the greater, the closer the mountains approach the coast. At Benghasi, 25 km from the Jabal Akhdar, the annual rainfall is approximately 270 mm, while Tolemaide and Appolonia, directly at the foot of the mountain, receive 306 and 440 mm respectively.

Between Benghasi and Appollonia the westerly winds hit the Jabal al-AKHDAR which extends from southwest to northeast. The moist air rises along the Jabal, discharges its content of rain and thereby gives this region comparatively ample precipitation, of which the coastal plain receives a modest share. From Appollonia eastward the Jabal and the low coastal plateaus of the Cyrenaica which run parallel to it alter their course. This also reduces the amount of rainfall in the cities of the eastern coastal strip. Derna receives 286 mm, Tobruk 160 mm, Alexandria 204 mm, and Port Said only 83 mm of rain per year.

In the steppe region which succeeds the narrow zone of the coastal oases toward the interior, the mean annual temperature apparently does not differ much from that of the port cities. Thus AL-AZIZIYYAH in Tripolitania has a yearly mean temperature of 21°C, but the coldest month (January, 11°C) and the hottest month (July, 30°) differ by 19°C while at AL-AZIZIYYAH which is only 40 km from the coast, the yearly variation of temperature is 5°C greater than at Tripoli. Furthermore, in the interior of the Jafara, the hottest month of the year is not August, but July. In Tripoli, during July, the cooling effect of the sea is still noticeable, while in the more distant parts of the coastal plains maximum temperatures are registered during that month. On days when southerly winds blow, absolute maxima of more than 50°C have been registered at AL-AZIZIYYAH several times; in September 1922, the highest day temperature

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

ever recorded at any meteorological station in the world was registered at 58° C. On the other hand, during the winter of the same year, the absolute minimum temperature at [redacted] was -3.2° C.

The yearly and daily variations are smaller in the steppe zone of Cyrenaica. Sulug, with a January temperature of 12° C and a June temperature of 27° C, has a mean yearly variation of 15° C. Rainfall in the steppe zone of the coastal plains amounts to between 100 and 250 millimeters. Castel Benito, 25 km south of Tripoli, receives 250 mm of rain while [redacted], 15 km farther south, receives only 180 mm. For the greater part of the Tripolitanian Jafara, an average of 120 to 160 mm can be assumed as being correct. In the steppe zone of Cyrenaica 130 mm were recorded at Agedabia and 166 mm at Sulug.

In the part of the Tripolitanian Jabal farthest from the coast, the yearly variations of temperature are greater. At Garian (721 m) a July mean of 27° C is contrasted by a January mean of 8° C. The absolute maximum for is 48° C for Garian and 45° for Jafran. During the winter, temperatures drop as low as the freezing point. During 1915, a temperature of -5° was recorded at Nalut. At such low temperatures, snow is not rare.

In the Tripolitanian Jabal, December and January are generally the months with the most rain. The further the mountain range retreats from the coast, the more the amount of rainfall diminishes. While Jabal Garian receives 375 mm of rain, the amount of rain in the Jabal Jafran region is [redacted] 256 mm, and in the Jabal Nalut area, which extends all the way to the Tunisian frontier and is more than 150 km from the coast, rainfall is only 152 mm.

The semi-desert belt is 50 to 100 km wide, and toward the south it gradually turns into the true Libyan desert. A clear borderline of this zone can be given neither in terms of climate nor of flora. Temperatures here approach those of the true desert. Maximum temperatures of 50 to 52°C are contrasted

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

by remarkably low minima, even during the summer, which are due to strong radiation during the night. The daily course of the temperature is thus subject to wide fluctuations. It is striking that the mean temperature of the Tripolitanian semi-desert is 1.3° lower than that of the coastal steppe. While [redacted] in the steppe has a July temperature of 30.1° C, that of Mizda, 120 km farther south, is only 28.8° C. The January temperature of the steppe, likewise, is 1.1° C higher than that of the semi-desert. These apparently paradoxical conditions are caused by the [redacted], a hot descending wind which comes down from the Jabal into the coastal plain, where it sometimes causes the temperature to rise 8 to 10° C. The relative humidity, of course, is considerably lower in the semi-desert than in the steppe. It varies between 30 percent in the summer and 50 percent in the winter. Rainfall is already very scarce, as evidenced by the fact that it is only 80 mm in [redacted] and 50 mm in [redacted]; 15 to 20 days of rainfall per year is the maximum.

The entire central part of Libya is a true desert. This, the driest climatic area, where organic life is restricted to a few oases and wadis, is a multiple of the size of all other climatic areas of the country. The maximum temperatures exceed 53° C very seldom, but below freezing temperatures are not rare. A temperature of -5° C has been registered at Gadames.

In the eastern part of the Libyan desert, the mean temperatures of both the coldest and hottest months are higher than in the western part. The oasis of Gadames on the Tunisian frontier has a July mean of 34.2° C and a January mean of 10.7° C. At Giarabub, however, on the Egyptian frontier, the June temperature is 39.2° C and the January temperature 19.1° C.

The daily temperature variation, during the hot season, lies between 15 and 25° C, and probably does not exceed 35° C in the Libyan desert. These unusually great variations in air temperatures are still not as great as those of the ground temperatures. The rocks in the desert heat up to 65° C during the day, and cool off to 10° C or less during the night. These fluctuations in

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

however, never reaches the full force of the real desert storms.

The [redacted] is physically exhausting. The dry-hot storm dries out the human body. Even the Arab peasants in the coastal plains flee from their fields at its approach, leaving their huddling sheep unguarded on the pastures. Camel and automobile caravans in the desert must halt, because the masses of sand, hurled into the air for a height of several hundred meters, reduce visibility to zero.

Europeans, during the [redacted], can easily drink 4 to 5 liters of water per day, while the negroes working in the oases of Tauroga and in Fezzan will drink as much as 8 or 10 liters per day. The Tuaregs protect themselves against excessive evaporation through their breath by using the famous Litham, a cloth tied in front of mouth and nose.

5. Sanitary conditions.

Life in Libya is much more bearable for Europeans than is generally assumed. The winter months especially are very mild in the coastal regions, so that many sick persons go there to convalesce. Summer is much more strenuous, because the heat sometimes lasts for months without any relief from rain. The exertions of troops stationed in the country away from inhabited regions and without permanent billets are, of course, much greater, even during the winter. This is the case especially during the sudden cloudburst-like thunderstorms, which are rare, and during northwesterly winds which cause a noticeable drop in temperature. It is essential, therefore, to be equipped with warm clothing and waterproof tents.

The climatic peculiarities which prevail in all of Libya and North Africa explain the fact that the following diseases are common:

1: Diseases of the respiratory tract (bronchitis, pneumonia, purulent infections of the middle ear as complications of colds).

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

2: Purulent tonsillitis .

3: Rheumatic diseases.

4: Acute intestinal diseases and diarrhea.

The causes of these diseases are the great daily variations in temperature, the lack of trees and houses which might afford shade, and the unsanitary local customs which are a matter of course. It must be avoided under all conditions to drink cold water while hot, or to drink a large quantity of water all at once; likewise, baths should be avoided while hot, and especially while perspiring. It is also advisable to protect the abdomen and to wear warm clothing against the strong nightly cooling-off. Strictest warning is given against keeping perishable foods, especially meat and delicatessen products, because they will spoil within a very short time, often within 24 hours, and cause the most serious cases of food poisoning. Opened cans of meat must be consumed at once, and shipments of meat and delicatessen products from home sh uld be forbidden, because these packages are usually spoiled by the time they reach those areas. Ice cream frequently causes diarrhea.

When excessive heat prevails, drinks should be taken only one swallow at a time. Thirst is best quenched by lukewarm tea or lemon juice with water. Lemons are in ample supply everywhere in the country.

The drinking water of the wells contains more salt than the water in Europe, in some regions noticeably so. Slight cases of diarrhea, caused by magnesium salts, therefore, can be expected. This salt content does not interfere with cooking, and is not harmful to the human organism, which becomes accustomed to it after a short time. By boiling the water used in making tea, or adding some lemon juice, the salty taste can be eliminated. Since there is no salt-free water to be had, nothing can be done about this minor nuisance.

The feet require very thorough care. The body should not be washed while sweating. The sore skin caused by the effect of perspiration is best

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

avoided by frequent changes of underwear, so that the wet clothing cannot chafe the skin. Powder made of one part zinc oxide and 2 parts talcum applied several times a day is recommended both as a preventative and as a therapeutic measure. The use of "Afridol" soap is also advisable. The skin can be acclimatized by very carefully dosed, short sunbaths.

The head must always be protected from the direct rays of the sun.

The flies are an extremely annoying pest everywhere, and protection from them should be provided for with all means at one's disposal, especially extreme cleanliness in bivouac areas and billets (e.g. burying of garbage) and building of latrines according to regulations. Bivouacs should never be set up close to native settlements.

Sunglasses should be worn always during the day, especially in summer.

Inasmuch as all available prostitutes may be assumed to be infected with venereal diseases, proper prophylactic measures must be strictly observed.

Because of its potentialities as a carrier of Malta fever, consumption of unboiled milk, especially of goat milk , must be abstained from.

The dwellings of the native Arabs and Jews are infested with vermin (lice, bed-bugs, fleas). Such houses will, therefore, be strictly avoided. Contact with dogs and cats will likewise be avoided, because their main parasites may also threaten human beings.

Plague and spotted fever are likely to occur in North Africa at any time. The former is carried and spread by fleas, the latter by lice and ticks. It is imperative, therefore, that meticulous personal cleanliness be observed and staying overnight in native homes be avoided. It must be stressed that persons afflicted with plague or spotted fever may not be aware of it because the natives frequently do not consult a physician and in many cases physicians are not within reach.

As a matter of general practice, instead of the afflicted person reporting his disease, the authorities have to search for the sources of infection.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

It is also advisable not to camp in locations having numerous rat-holes.

Typhus and dysentery (usually amoebic dysentery) occur frequently. Only tested and approved water, therefore, should be consumed without previous sterilization. By the same token vegetables, unless their origin has been tested and approved, should not be partaken of uncooked, and fruit must be washed and peeled before consumption.

The water basins are filled with tiny leeches which, if imbibed with the water, cling to the throat and grow there, causing serious discomfort for weeks. Bathing in or drinking of such water, therefore, is prohibited. It is safe to bathe only in salt water (ocean water).

Malaria occurs throughout the coastal areas and in the oases. Prescribed prophylactic measures will, therefore, be strictly observed. Camps should not be set up near stagnant bodies of water or small pools, but at least ten minutes' distance away from them and, if possible, on high grounds. Mosquito netting should be used.

Trachoma, the justly feared Egyptian eye disease, is widespread , affecting at least 50 percent of all natives. The duration of the disease is considerable, the treatment painful, and the cure difficult. Prevention of contact with the natives is a sure method of avoiding contagion. All indications of conjuctiva tunica must be reported at once.

All minor injuries must be carefully treated, especially if affecting the legs, in order to avoid formation of slow-healing abscesses.

The country's many half-savage dogs, the majority of which are afflicted with rabies, constitute a serious scourge. The following preventive measures must be observed:

1. Rabid dogs, or dogs suspected of having rabies, which have not bitten anybody are to be shot at once.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

2. Dogs suspected of having rabies who have already bitten human beings are to be caught alive, if possible, and turned over to the veterinary for observation. Should examination prove that the dog in question is not afflicted with rabies, the person bitten by it need not be subjected to anti-rabies treatment. However, in the event the dog has been killed, the victim must submit to a series of vaccinations, inasmuch as examinations of a dog's brains for traces of rabies is a cumbersome process and findings cannot be obtained quickly enough. Inasmuch as the human cure requires 15 to 25 days and is both painful and dangerous, veterinary observation of live dogs is of great practical significance.

3. If the dogs having inflicted bites cannot be found, all persons so bitten must be given prophylactic treatment.

6. Water Supply

Despite the winter rains, Tripoli's habitability depends upon the exploitation of ground-water. The natives call this water "dead water" in contrast to the "live water" which flows on the surface. Drillings undertaken by the Italians have led to the discovery of a number of ground-water zones with a high yield.

The upper ground-water zone is in the contact area between the outcropping limestone plate and the loose soil above it. This is where the rain-water which has percolated through the ground collects; it is fresh and quite drinkable, although insufficient in quantity to meet the annual requirements of the population. It can easily be made accessible by means of shallow wells. The depth of these fresh-water zones in the coastal oases measures between 5 and 15 meters. Because of the even sloping of the Jafara, the depth of the ground-water level increases towards the south. At AL-AZIZIYAH it measures 40 meters and at FUNDUQ SHIBANI in the Jafara 80 meters. This infiltration-water zone was made accessible by the wells built by the natives prior to Italian colonization and was exploited to the greatest possible extent. In the oases of Tripoli and Tagiura alone,

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

8000 wells are employed to pump up water. Only in a few locations could the Italians add new wells to the 30,000 old ones already in existence, so that an increase of barely 800 wells was effected.

Below this upper-level fresh water zone there lies a deeper salt-water zone which owes its origin to the stagnant ground-water streams along the coast. In many places, therefore, the fresh-water wells cannot be vertically extended because of the presence of salt-water beneath a given depth. Hence good drinking water is found at low depth in the coastal areas, even close to the seashore, while wells of greater depth yield only salty water. Because of the water shortage it is necessary to exploit both ground-water zones, with the upper one satisfying the drinking water requirements, and the water from the lower level being used for washing and other household needs. In Tripoli one house frequently contains two wells, one of which has a depth of 2 meters and supplies fresh-water, while the other reaches the salt-water level at only 6 meters.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The water supply of Tripolitania was greatly expanded in 1926, where the Italians started large-scale deep drillings. It was discovered that there is another level of fresh water below the two aforementioned ground water levels in the coastal plain and in most parts of the rest of Tripolitania. This water level is under pressure. The artesian water rises in the drill holes as far as the seepage water level, and sometimes even all the way to the surface. Large amounts of water at depths of 300 to 400 meters were reached with the most modern equipment. A drilling near Misurata yielded 360 cubic meters of water per hour, and another drilling at Sidi Misri 400 per hour. In 1937 there were 550 artesian wells in operation, and drillings have been continuing ever since. Drillings West of SABRATA near Zuara and Bu SHIMASH have established the presence of deep ground water levels, but the water temperature is too high and the water is not drinkable. The yield of the artesian wells increases from west to east. The ten wells of Orispi and the four wells of Mario Gioda, South of Misurata, yield 300 cubic meters of water per hour each.

There is a large number of springs at the edge of the Jabal, but their yield is limited and the water of nearly all of them is brackish. All the wadis running down from the end in the Southern Jafara . Wadi MAJENIN is the only one west of Tripoli to reach the sea. Only in the eastern part where the plain is very narrow, are there a few valleys which go as far as the seashore. Torrents flow through them during the rainy season, but they contain hardly any water during the dry season. The same applies to the wells in the Jafara. While they overflow during the rainy season, their yield decreases considerably during the dry period; the wells become gradually more and more salty, and frequently run completely dry.

The only wells on the Jabal Nafusa plateau are located in the vicinity of Jafran and Chicla. Some of them yield large volumes of water, such as those of AR-RUMIYYAH and AL-KALAYIFA but the yield decreases considerably during

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

the summer when the additional water requirements must be met with water from cisterns which were filled during the rainy season.

Southeast of Misurata begins the semi-desert zone of the Gran Sirte, covering the area between Tripolitania and Cyrenaica. No drillings for artesian ground water have been carried out here, and the only water available is that of the small coastal oases.

In Cyrenaica, despite the presence of some wells with high yields, the water supply poses an even greater problem than in Tripolitania , because the limestone terrain is highly permeable and there are no artesian wells. There are only a few small wells in the Bengasi region, not enough for local consumption and inadequate to meet any greater demands. The highest ground water level is not reached until a depth of 10 to 20 meters. The water struck by wells is nearly always a little brackish, sometimes impotable and containing more salt than the sea. Even Bengasi's nine deep wells yield only slightly salty water, which is not sufficient to satisfy all the water demand of the city. None of the drillings which have reached depths of nearly 1000 meters have struck artesian water. A long-distance water pipeline had to be laid from Legeto Micilia to irrigate the Italian colonists' settlement of AL GUWAISHA south of Benghazi. Drinking water is brought in daily by railroad from Bengasi. Near SULUK, terminal of the narrow gauge railroad from Bengasi, there is some water with an iron content and salt water at a depth of 20 meters. The only water supply, therefore, comes from rainfall which is collected in a cistern with a capacity of 1000 cubic meters. New drillings have been started near Agedabia, 150 kilometers south of Bengasi, but nothing is known as yet about the results.

In the Barce basin, the well water is excellent in comparison to that of the coastal plain, even though it is not completely free of mineral admixtures. The water level is not directly above the limestone stratum; the rocks must be drilled through a few meters before the water is struck.

In the central part of the plain the wells yield up to 400 cubic meters of water per day. Barce is supplied by a well built in ancient times. It is located 1 km north of the airfield and is 45 meters deep. There are

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

(1) Berbers, who are the original natives, although some of them have maintained their original characteristics and language under Arab pressure. About one third of Libya's native population still speaks Berber dialects. Large groups of Berbers are found chiefly in the oasis of Zuara in the coastal region, and in the Jabal Nafusa. The Berber language also predominates in the oases of Gadames and Gat. In Eastern Libya only the Berbers of the oasis of Augila have withstood Arab influence. Their faith is not that of the orthodox Islam, as is that of the Arabs; they are mostly Ibadites. Almost all of them are peasants. Racially, the Mediterranean element predominates.

(2) Arabs: Most of the natives are call Arabs, but a large number of them are really Arabicized Berbers, who have adopted the Arab language, religion, and customs. They constitute about one third of the population of Tripolitania and more than half of the population of Cyrenaica. Only approximately 10 percent of the native population is Arab in the strict sense, i.e, Semite. The Arabs are orthodox Mohammedans. They were the most active element in the fight against the Italians. They are either nomads or semi-nomads. Only a few of them have settled in oases where they carry on agricultural pursuits.

(3) Negroes: About 20 percent of the Moslem population consists of Negroes or has Negro blood. They are the descendants of freed slaves. Almost all of them are Sudanese Negroes who have maintained their languages and customs.

(4) Jews: who constitute the fourth element of the native population, nearly all town dwellers. There are 15,000 Jews in Tripoli alone, i.e., more than half of the entire Jewish population of Libya. They are merchants or artisans and are opposed to the Mohammedan population.

b) Economy

In addition to their linguistic and religious differences, the natives also differ in their economic methods.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Since the country is so diverse in its natural features, a balanced agriculture, consisting of cultivation and animal husbandry, is rarely possible. Thus, part of the population cares for fields and gardens, while the remainder raises cattle. But since the peasants frequently own herds of cattle, while the cattleman sometimes grow barley here or there in the steppe and own date palms and fruit trees, there are all kinds of transitional stages from settled peasants to outright nomads, and an unequivocal distinction cannot be made. Nevertheless, the conflict between peasants and nomads is great and often leads to fighting resulting in the killing and robbing of the peasants by the nomads. The settled population was, therefore, in favor of the annexation of the country by the Italians and were helpful in the subjugation and pacification of the country. A clever policy toward the natives, however, has enabled the Italians to win the favor also of the nomadic part of the population.

The economy of the natives in Tripolitania is dominated by the peasantry, in Cyrenaica by the nomads. In Cyrenaica, therefore, agriculture and horticulture are found only on a very small scale. The reason for that is the fact that the population of Cyrenaica has adopted the economic customs of the Arabs in the course of its Arabization, while the Berbers of Tripolitania have maintained their own customs, including agriculture.

The natives grow grain and build orchards, with or without artificial irrigation. Rainfall is sufficient only in the coastal plain of Jafara and in the northern part of the Jabal Nafusa for agriculture with natural irrigation, but even there agriculture and horticulture are carried on with artificial irrigation wherever possible. In the interior of the country, where rain is too scarce, cultivation is possible only with the aid of artificial irrigation. Artificial irrigation by water supplied by springs exists only in isolated spots on the slope of the Jabal Nafusa. The artesian wells of the oasis of Gadames was the only one known prior to the colonization of the country by the Italians. It had been supplying the necessary water for irrigation since

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

antiquity. Aside from these exceptions, cultivation in the desert oases and in the coastal areas of Tripolitania could use only bucket wells 5 to 7 m deep, which tapped the ground water and utilized it to the utmost. Since 1926, artesian wells have been dug in the Jafara and most of the other regions of Tripolitania, thus making possible a great expansion of agriculture through artificial irrigation.

The most important crop grown by the natives without artificial irrigation is barley. Wheat plays only a subordinate role. Artificial irrigation is used for growing vegetables as well as grain. In the past few years, grain-growing by the natives has increased considerably with the assistance of the Italians. The extent and the location of the cultivated areas, however, depend each year on the amount of rain received.

The orchards are typical of the peasant settlements of Tripolitania. The beautiful groves of date palms, olive trees, and fig trees are the most remarkable features of the region. Those fruit trees are essential to the food supply of the natives.

The most important fruit tree grown in Tripolitania is the date palm. Libya has 3.5 million date palms, of which approximately 2 million are in the coastal area of Tripolitania, ~~which is the~~ largest date producing country in the world. The best conditions for date-growing prevail in the desert oases, however, where the summer heat and dry air, combined with the ample supply of ground water, enable the fruits to grow to large size. These dates can be easily stored and shipped, while those produced in the coastal oases contain less sugar and are usually consumed locally. The date palm is a source of wealth for a large portion of the native population in the oases in the interior of the country. The Italians are attempting to encourage the planting of new date palms.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The olive tree needs only very little rain. It is grown in the coastal regions and in the Jabal Nafusa between Jafran and Kussabat without artificial irrigation. It is the typical tree of the Jabal. Since their root systems are widely spread due to the dryness of the ground, the trees are planted at 20 m intervals. The olive groves, therefore, are usually very thin. The olive groves of the natives of Tripolitania contain a total of 800,000 trees, while Cyrenaica has only about 100,000.

The fig tree is also common in the groves and orchards of the Jabal villages. It usually does not reach great size and is much more sensitive to dry weather than the olive tree. Its fruit takes the place of the date in the diet of the Jabal peasants.

The gardens of the natives seldom contain any types of fruit trees except those mentioned above.

Most productive regions of Libya are suitable only for cattle raising, which is carried on by the nomads and semi-nomads in the drier areas of Tripolitania, Cyrenaica, and the southern desert steppes.

The wealth of the nomads is constituted by their sheep herds, which is very well adapted to local conditions. The Berber peasants also own sheep and goat herds. They do not graze near the villages, however, but move through the country in search of water and grazing lands, led by hired herders. Recently, the Italians have also begun to engage in sheep-raising. The total number of sheep in 1937 was 613,000, while goats totaled 408,000. The Italians are encouraging the breeding of small animals by making available new water supplies. Beef cattle are raised on a limited scale since the physical conditions of the country are not favorable to the cattle industry. There were 47,000 heads of cattle in 1937. Horse breeding is also of little importance (8,700 heads).

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The dromedary and the donkey are the draft animals of the natives. Because of their frugality, they are very well suited to the country. In 1937, there were 39,000 donkeys and 66,000 dromedaries.

Since 1928, the Fascists have turned their attention toward the colonization of the new country through Italian peasants. This project has made great progress especially during the past few years. The Italian peasant population at present numbers about 40,000. The Italian settlements are in the Tripolitanian coastal plain, on the Barce plateau in Cyrenaica, and on the Jabal al-Akhdar. The rural settlements of Italians in the eastern Jabal Nafusa and in the Bengasi coastal plain are small.

The Italian peasants grow barley, wheat, vegetables, wine, olives, almonds, and other fruit trees. The orchards grown by the Italians cover an area of about 53,000 hectares.

The pacification and the colonization of the country have caused the area under cultivation to increase steadily during the past years. The crops vary in size every year, due to the great variations in annual rainfall. In 1938, the wheat crop was 3,520 tons, while in 1939 it was only 2,500 tons. In normal years the production of the country is sufficient to cover the food requirements of the civilian population. The garrisons, however, must be supplied from home.

8. Communications

a) Railroads

There are few railroads in Libya. The development of the automobile made it more practicable to build highways instead, especially since railroads, owing to the huge size of the country and the comparatively small volume of traffic of goods, would not be economically sound.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The Italians built only four short rail lines during the first years following their annexation of Libya, partly for strategic reasons. These lines originate in the ports of Tripoli and Benghasi and their respective length is as follows (in Km):

Tripoli - Zuara	- 118
Tripoli - Garian	- 89
Bengasi - Barce	- 116
Bengasi Soluk	- 56

b) Roads

The most important communications link in Libya is the great coastal highway known as the Litoranea, running from the Tunisian to the Egyptian frontier and connecting the two "islands of civilization" of northern Libya, namely Tripolitania and Cyrenaica.

The asphalt highway is connected to a number of unimproved and dirt roads, the latter being passable cross-country routes with road markers. The oases of Gadames, Mizda, Nalut, Hun, and Murzuch can be reached by good highways which are passable throughout the year even by heavy trucks; but in general, dirt roads are the only means of communication in southern Libya. Good road connections between southern Libya and southern Cyrenaica are lacking.

The best road leading to the Sahara connects Tripolitania and Gadames. Other roads lead from Tripolitania to the oases of the Fezzan and to the Tibesti mountains, from where tracks or caravan routes run to Lake Chad, while there are also roads leading from Cyrenaica to Kufra and Giarabub.

Details on the individual roads and tracks are given in section D.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

As a result of the development of automobile traffic, caravan traffic has decreased, especially in the northern regions of the country. The number of camels in 1937 was 66,000, after having suffered considerable losses in the previous years. In the South, particularly in the Fezzan, caravans are still important today.

c) Experiences on the use of motor vehicles in the Libyan Desert.

The gravelly desert (Serir) is nearly everywhere passable for ordinary tanks and trucks. They can be driven at speeds up to 70 km/hr. They do not leave deep tracks on solid surface. The rocky desert (Hamada) has a solid enough surface to support motor vehicles but, due to the great number of outcropping jagged rocks, it can often be passed only after the rocks have been cleared away.

Trucks find it difficult to negotiate areas of the loose rubble piles and drift in sand. Vehicles should never be sent on desert missions singly, but in convoy.

Wire mesh up to 3 m in length is used to move cars mired in the sand of the Libyan Desert, as in the Sahara. Trucks should also take along boards. The wire mesh is pushed underneath the front and rear wheels and the vehicle is started up with a jerk. The boards are placed underneath the front wheels. Combined use of wire mesh and boards will get any vehicle out of the sand.

For trips through sand and dunes, the use of 12 m long rope ladders with steps made of tough bamboo sticks has proved to be practicable. The [redacted].

Light cars are more suitable than heavy ones. Tracked vehicles are no longer used for passenger or cargo traffic. The Ford Model A with 9-inch low-pressure tires has proved to be a very useful vehicle. These tires are now generally used in all desert areas of the world.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The small Ford has also been used with good results. It should be equipped with 7.5 inch tires. When traveling through sand, the air pressure in the tires should not be too high.

If the proper technique is used, even the 70 to 100 m high dunes of the Libyan desert can be negotiated, since they usually consist of packed sand and have a dangerous zone of loose sand only at the foot of their western slopes.

The explorer L. E. d'Almasy gives the following advice for crossing these dunes, on the basis of his trips through the Libyan Desert:

"Rush the slope which appears to be perfectly vertical at a speed of 80 km/hr. The yellow sand blinds one so badly that it is impossible to see any contours in the sand at the foot of the dune, despite the wearing of very dark sunglasses. The only marker for the eye is the crest of the dune, which is visible as a sharp line against the deep blue sky. This line descends with frightening rapidity as soon as the climb starts. At the very moment when it stops descending, the car has to be whipped around sharply to the right or to the left, because this means that the crest has been reached.

In order to get down to the space separating two dunes over the western slope of the dune, it is best to make a run on the crest of the packed dune and then make a sharp ninety-degree turn and drive straight down the slope. Even at high speeds, the driver must always be ready to shift to a lower gear, so as not to get mired in the strip of drifting sand.

In the opposite direction, from west to east, spots should be picked for the ascent where there is no drifting sand. These spots should be marked so the driver will not miss them when he rushes the dune.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

It is advisable to travel in the early morning hours, since the nightly cooling makes the sand harder and more suitable to carry heavier loads."

In general, the crossing of dune areas is so difficult that it should be restricted to risky individual missions. Even those should be carried out in convoy form, with at least two vehicles participating.

When the car is equipped with condensers (all special desert vehicles carry them), a daily quantity of 4.5 liters of cooling water must be refilled. During hot south winds (Qibli), calm, or tail wind, the water consumption may double. It is advisable to take along enough radiator water for twice the length of the projected journey; 4.5 liters of water for drinking and other personal uses per man per day should also be taken. This figure applies to the winter months. Near the coast, the rate of water consumption is lower.

When traveling through unmarked terrain, the direction is to be determined carefully by use of a compass, and the length of the route traveled is to be recorded. It is advisable to carry a log for this purpose, in which one member of the crew constantly records direction and distances. If the destination of the watering point has been missed, navigation procedures (entering of the route and direction to scale on the map) can be used for an approximate determination of the position. Any other kind of navigation will fail, as experience has shown. If reinforcements are expected, the route is to be marked.

In those parts of the desert where drifting sand is rare, tracks will remain for years, even for decades. Drifting sand, however, may obliterate them temporarily or permanently. Sections running through sand must, therefore, be marked very thoroughly.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Combined automobile - airplane missions have been found to be very practicable. If radio communication is not possible, light signals for both parties, to be given at definite times of the night, should be pre-arranged. It is important to note that distant light signals are difficult to see in moonlight, especially when looking toward the moon. Observation is best carried out by having four men observe the horizon at the arranged time, each observing one quarter section of the horizon. Since visibility is good, light signals can be seen over distances of 20 km. In order to avoid confusion of signals with shooting stars, a succession of two signals at prearranged time intervals should be used (d'Almasy's experiences). It should be pointed out that car tracks are difficult to see from an airplane during the noon hours, because of the blinding effect of the sand.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

B. DISCRIPTION OF THE VARIOUS AREAS

I. Tripolitania and Cyrenaica

1. The Coastal Area of Tripolitania

The coastal area of Tripolitania has, compared with the other areas of the country, more rainfall, a cooler climate, and above all, a chain of coastal oases. However, it is by no means exclusively arable land.

Small salt water lagoons and dunes are scattered throughout large areas along the coast. The salt marshes, which the Arabs call [redacted], are very shallow lakes which dry out completely during the hot season. Primarily sodium, calcium, and magnesium compounds, besides sodium chloride, are found in these salt marshes. The saline and gypseous crusts are up to 30 centimeters thick; in the sebkas of the western part of Tripolitania, the gypseous crusts are as thick as 1.90 meters. The largest sebkas of Libya are located at the Gran Sirte, one of which, the [redacted] of [redacted] along the coast, is 3 kilometers wide and more than 120 kilometers long.

Dunes, 10 to 20 meters high, separate the sebkas from the sea. The dunes are 30 meters high along a stretch of 20 kilometers, near the coast of Tripolitania, north and northwest of Misurata.

Cliffs which are generally only a few meters high although in some places they reach 15 to 20 meters, border on the Tripolitanian Jafara toward the Mediterranean (photograph No 8 and No 9).

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The oases of the coastal area depend on the overflowing ground water. They begin in the west with the Zuara Oasis followed by the oases of AL-AGILAT, SURMAN, ZAWIYA, Zanaus, and Tripoli in an almost continous chain. The Jabal reaches the sea east of Tripoli and from there along a stretch of approximately 100 kilometers, no coastal oases are found. They again appear east of Homs with the SAHIL Oasis, which is followed by the oasis of Zliten. A plateau 100 to 150 meters high reaches the sea shore between Zliten and Misurata, and interrupts the chain of oases along a stretch of 30 kilometers, which is then followed by the last oasis in the area, that of Misurata.

There are no large oases on the Sirte.

The oases are extremely fertile. Barley and wheat, fruit trees, olive trees, apricot trees, pomegranate trees, almond trees, and various types of vegetables are cultivated in the vicinity of the wells. The population is concentrated in settlements, close to each other in some areas, scattered in others. The natives live in huts of dried clay (darb-AL-bab). The areas between AL-AGILAT and Tripoli, south of Tripoli, between Tripoli and Tagiura, and south of Misurata (Crispi, Gioda, Tuarga) belong to Italian colonists who grow primarily tobacco, lucerne, and citron fruit. Of the 2 million palm trees in existence in Tripolitania, one million grow in the palm grove of Tripoli alone.

Some of the oases are endangered by shifting dunes of coarse white sand driven by strong winds toward the southeast to Zuara, Zliten, and Misurata. These dunes are almost totally barren.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

2. Qifar (photograph Nos 17 through 20)

The Qifar, a strip of flat country, extends from the slopes of the Nafusa Jabal to the sea. Sandstones form the underlying strata of this Tripolitanian coastal area. Near the coast, the rock base which made the opening of quarries possible outcrops occasionally. Elsewhere, the rock base is located for beneath the sands, gravel and pebbles which have been washed down from the Jabal. The finer parts of these deposits, the reddish, dust-like sands, are blown to the dunes by the winds. In addition, the hot Qibli, blowing in the spring and fall from the Sahara, carries every year large amounts of dust and fine drifting sands which settle on the Qifar. At the present time, a layer of drifting sand slightly sloped toward the north, reaches the sea and the coastal dunes. This layer, which in some places is 15 meters thick, covers the rock base.

The surface of the Qifar has gentle and dry or rocky undulations alternating with wide basins called garaa and bahira (small lakes) in which collects the water of the streams from the Jabal.

The circular or linear shaped depressions, called chegas (cracks) can be traced back to chemical erosions of the gypsum. The linear depressions are called KHAWI [redacted]. A zone of KHAWIS [redacted], which is difficult to cross, constitutes the border between Tunisia and Tripolitania.

Various inland dunes give a special character to the scenery of the Qifar. These shifting dunes of the Tripolitanian Qifar cover up to one-fourth or one-fifth of the entire area. The largest chain

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

of dunes, which is 60 kilometers long and 15 kilometers wide, surrounds the Tripoli and Tagiura Oases.

The planting of trees in the dunes to prevent them from shifting is one of the important achievements of Fascist colonization.

Looking over the Tripolitanian Qifar from an elevated point, the untouched parts of a number of hills can be seen. Each hill is only a few meters high and about 10 meters in diameter at the most. There are acacia giraffae which the winds [redacted] cover[redacted] with sands. These sand piles which are increasing with the growth of each acacia giraffae provide a certain protection, which otherwise would not exist in the desert areas.

The number of depressions and water cracks in the coastal plain is very small. Almost all the wadis which cut the edge of the Jabal end in the southern part of the Qifar. The [redacted] MAHJANIN Wadi is the only one reaching the sea near the city between the Tunisian border and Tripoli. In the eastern part of the Qifar, however, where the Jabal extends to a point near the coast and the plain is comparatively narrow, several valleys reach the shore. The larger valleys are filled with water throughout the year, or at least part of the year, while the smaller zones are filled occasionally by mountain torrents as a result of [redacted] heavy precipitation.

The Tripolitanian Qifar is a real steppe, in which grass and plants [redacted] sprout only from February [redacted] to May, following the winter

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

and spring rains. The steppe is lifeless during the other months of the year, when no rainfall at all occurs. The plants die and are blown away by the winds. The few artificially irrigated oases, which look like green islands, are in sharp contrast with surrounding brown and yellow areas. Fig and date palms grow only in depressions where the ground water is close to the surface; the other parts of the Qifar are almost completely without vegetation.

3. The Nafusa Jabal (photograph Nos 22 through 26)

The land form of the Jabal can be compared with the German Swabian Alps. The Tripolitanian calcareous plateau breaks off in the north toward the coastal plain into a bold precipice up to 500 meters high. This gigantic scarp extends for 600 kilometers eastward from the Tunisian border. Wadis, amphitheatrical boxes, and ledges make up the structure of this scarp irregular. Seen from the north, the Nafusa Jabal appears to be a mountain range; Actually the area has only one escarpment in the north; in the south it is gently sloping and the Jabal here disappears almost unnoticably under the sand and gravel deposits of the desert.

The rock base in the shallow depressions of the plateau of the Nafusa Jabal is covered with a loesslike layer of drifting sand which is up to several meters thick. This layer is very important to colonization. It not only makes the soil fertile in the fields and gardens of the Berbers, Arabs, and Italian colonists. The natives have their cave villages built in this loose but solid soil.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Some mediterranean brush vegetation (macchie) is found on the bold precipice of the Nafusa Jabal where it approaches the sea shore and is exposed to the ocean breeze. Juniper, wild olive, and mastic trees bearing fruit which are utilized by the Arabs, form a thin brush-wood in conjunction with cistus shrubs, thymes, lavenders, rosemaries, and other aromatic shrubs and plants along the calcareous slope. No shrubs grow on the escarpment of the central and western Jabal, nor on the plateau itself; thin grass clusters take their place here. Oil tree cultivations planted by Arabs and Italians are predominant in the Jabal and fig trees in the gardens of the natives, whereas almond and apricot trees have only been planted recently in large numbers by the colonists. Date palms still grow at the foot of the escarpment, but are only found in some protected places of the Jabal.

4. The Hamada al Hamra (photograph Nos 33 and 34)

The Hamada al Hamra (red plateau) is a vast plateau of 100,000 square kilometers. It measures 200 kilometers from north to south and 700 from west to east, of which 400 kilometers lie in Libya. This plateau extends into the French Sahara, where it is known as the Hamada al Tinghert. It is a bare, monogenetic limestone plateau, 450 to 500 meters above sea level, covered with yellowish gravel. In the east the Hamada al Hamra is bordered by cliffs formed by the depression which separates the plateau of Tripolitania from that of Cyrenaica. The Hamada of the Jabal as Sawda, which consists of volcanic rocks, rises in the southeast. The Hamada al Hamra is a rocky desert with a few watering places spaced at great intervals. There is not traffic in this area; all traffic is limited to the edges of the plateau (Tripoli-Brach and Tripoli-Gadames roads).

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

5. The Gadames, Derj and Sinawan Oases (photograph Nos 27 through 29)

The Gadames, Derj and Sinawan Oases are located in a basin extending between the Hamada al Hamra and the large dune region of the "Grand Erg" which is located on French territory. A passable road connects the oasis group of Gadames with Tripoli. Gadames is an important junction of the caravan routes from southern Algeria and the Fezzan.

The most important place in the group is Gadames with 2000 inhabitants; it is a typical narrowly constructed oasis village with box-like clay houses. The narrow streets are partly roofed (see photograph No 29). Gadames has a natural Artesian well (Ain-al-Eras, mare well) which yields 120 to 180 cubic meters of water per hours, partly used for irrigation. In addition, there are hot springs [redacted] merging along a rock crack and yielding approximately 150 cubic meters of water per hour. ~~The Italians in recent years contructed, a well which is 320 meters deep and yields 120 cubic meters of water per hour.~~ The Italians in recent years contructed a well which is 370 meters deep and yields 120 cubic meters of water per hour, designed to improve the living conditions of the population in the oasis. This well makes possible the irrigation of 20 hectares of land. The entire arable land of the oasis covers approximately 75 hectares and contains about 25,000 palm trees.

The Derj Oasis which is located east of Gadames at the edge of the Hamada al Hamra has a well yielding 1 cubic meter of water per hour.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The northernmost oasis of this group is the Sinawan Oasis, which is located in a sabkha 480 meters above sea level. The well of this oasis has a capacity of 1 cubic meter.

The population of the entire oasis region consists of 3000 Berbers. The region is of no great economic importance, but is an important gate way to and from Algeria.

6. Cyrenaica.

Cyrenaica projects in the shape of a peninsula far toward the north, east of the Gran Sirte. Only the western coastal area is developed and extends to a point just beyond Bengasi. A Calcareous plateau predominates the scenery of Cyrenaica. This plateau breaks off at a 5° to 10° angle in the form of gradients leading toward the Mediterranean Sea, as gently as in Tripolitania. The so-called Jabal al-Akhdar, which is up to 880 meters high, breaks off into 2 scarps, whereas the Tripolitanian Jabal breaks off into one scarp only . Numerous wadis pointing toward the south, change the Jabal proper into rolling country. V-shaped wadis also ran in the direction of the plateau from the northern cliffs. These wadis are generally small; only the Wadi al Kuf is comparatively large; it originates south of Cirene, runs parallel to the cliffs toward the west, and finally curves off sharply toward the north and crosses the scarp. Further east there are the Derna and a Naga wadis.

The useful coastal area of Cyrenaica starts half-way between Agedabia and Suluk. It reaches its widest point (50 kilometers)not far from Suluk, narrows to almost 25 kilometers near Bengasi, then turns toward the northeast and runs out gradually and reaches it finally at Sidi Znadi, ending there in a narrow beach strip.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

10 to 15 kilometers square and is located around Barce. It is filled with alluvial red soil which is more than 40 meters thick and is excellent for modern colonization. Smaller depressions with similar fertile deposits are located in the area of [redacted] AL-HAYAR and [redacted] AR. KAJIMA.

The Jabal of Cyrenaica is not covered with drifting sands. There is only a bare calcareous plate which in moist areas is covered with a thin loamy layer. This light brown and dark red soil glitters in all colors and is found only in lower and more level areas. The rain has washed away the alluvial soil from the sloped areas to the adjoining depressions. Fertile depressions filled with red soil alternate with bare rocky ridges in the Jabal [redacted] AL-AKHDAR over comparatively short distances.

The vegetation of the Jabal [redacted] AL-AKHDAR is by far not as poor as that of the Tripolitanian Jabal. The plateau of Cyrenaica is covered with impenetrable brush over an area 160 kilometers long and 30 kilometers wide. Much work had to be done by the Italian farmers to turn this area into arable land.

In addition to [redacted] juniper, pistachio, thymes, lavenders, rosemaries, and many plants of the cistus species, wild carob trees, common oak trees and broom - like yellow blooming shrubs are found in great numbers in the macchie of the Jabal [redacted] AL-AKHDAR. Aleppo pines grow in the wadis east of Cirene and in all dry stream beds, which cross the escarpment and open up toward the sea. These trees are up to 10 or 15 meters high and their trunks are up to 50 centimeters thick.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Just as impressive as the cypress forest in the Wadi al Kuf and in the vicinity of the new settlements of Beda Littoria and Luigi Razza are the ancient knotty olive trees growing at AL-GARIB along the northern section of the Barce Cirene road. Their number is estimated at 25,000 in this region alone and at more than 100,000 in all of Cyrenaica. These wild olive trees were originally planted by man.

Large areas with herbaceous plants, such as sages and beautifully blooming bulbous plants, grow on the lower Jabal gradient of the macchie. This herbaceous steppe at AL-HAYAN is interspersed with myrtles, wild artichokes, fennels, hedge mustard, forget-me-nots, and some esparto grass. Wild poppy sparkles in yellow and red over vast areas after the spring rains in March. Only the grey, leafless acacia giraffaes stand out in the flower carpet. They turn green in April or May, when the grass has grown tall and hides the millions of flowers. Several weeks later this beauty is gone. The herbs and grasses die, and the greyish-green macchia predominates the scenery.

The vegetation of the Jabal AL-HIRDAK assumes a more steppe-like character east of the new settlement of Giovanni Berta. The macchia becomes gradually more bare and large areas are covered with round shrub pads of thorny matted semi-shrubs.

The southern part of Cyrenaica merges into the Libyan desert.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

II. The Southern Region (Fezzan and the Libyan Desert)

1. The Fezzan - Summary

The eastern section of the desert-like southern part of Libya is called the Fezzan, which is a shallow basin between the Hamada al Hamra in the north and the Tassili Plateau and the Tibesti Highlands in the south.

Its importance lies in the oases which intersperse this vast region and offer good bases for the shortest and, eventually, the most important route to French Equatorial Africa. The dry seasons in this section of the desert are generally shorter than in the eastern Libyan desert or in the Sahara. The Fezzan is passable for motor vehicles up to the southern Italian border. Operations, however, are possible in this region only to a limited extent, because of difficult logistic problems.

Two large sand and dune areas are located in the eastern Fezzan. They are called Edeyen (In Italian, Idehan) and are impassable for motor vehicles. They are of the erg type. The mountain ridge of the Hamada Mustuch, the northern edge of which follows the route to Gat, separates the two areas.

In the east, the Fezzan is bordered by the Harudj al-Aswad, a rolling basaltic area which rises to 1200 meters above sea level, and is almost impassable, because of its deep wadis. A second basaltic mountain region, the Jabal as-Sawda, borders the al Giofra Oasis northwest of Harudj.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The Fezzan basin is bordered by escarpments which generally constitute great obstacles.

The plateau of the Hamada al Hamra ends with an escarpment in the north toward the Edeyen and the Sharati wadi. This escarpment runs in the east into the lower gradient of the Jabal as-Sawda, whose slope is divided into 2 gradients. The second escarpment is located further north and is well noticable at Bir al Jaf. The escarpments in the eastern part of the Harudj are known as Dar al-Gani, and Dar al-Maid; the projecting lower escarpment is called Sirir al-Gattusa. The Jabal Ben Ghnna has also 2 escarpments. The lower escarpment is located near the Gatrun Wadi, while the upper one is at 60 to 70 kilometers further east. The Mangheni Highplain breaks off in the south into steps in the direction of the Edeyen of Murzuch; in the west, there are the Ansach Mellet and the Acacus. The edge of the last 2 mentioned escarpments is divided into 2 branches, of which the inner branch turns from the west toward the northeast into the Amsach Settafed and Hamadat Murzuch and then runs circle-wise toward the Fezzan basin. The outer branch (Acacus) continues along the western border of the Edeyen which is the connecting link with the Hamada of Tinghert and Hamada al-Hamra.

The elevation of the border of this basin is between 600 and 800 meters above sea level, although at some points it reaches 1000 meters; a few mountains are as high as 1200 meters. The lowest parts of the basin are located around Brach (approximately 300 meters above sea level). They are followed by wide wadis which are filled with water in some places, or in which water is found only 3 to 5 meters beneath

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

the surface, so that these wadis, which consist mainly of clay and sand, bear large palm groves. There are several oases in the wadis of the Fezzan which are important bases for the settlers. The Sirir al Gatusa and the oases separate the southern from the northern part of the basin. Both parts contain vast sandy desert (Edeyen) with dunes up to 100 meters high, of which the Edyen Murzuch in the south seems to be the largest .

The central region of the Fezzan is inhabited by Arabs, the majority of whom belongs to the so-called "Black Arab" race (Arabs of a dark complexion). The Tibbu people, also dark in complexion (a mixture of Hamites and negroes), live south of the Murzuch-Zuila line, while the Tuareg (Berbers) live around Ubari in the west. The oases of the Fezzan are of considerable economic importance. They contain approximately 1½ million date palms and a population of 37,000.

2. The Fezzan Oasis Groups

a) Al Giofra (photographs No 67 and 68)

The Giofra is a somewhat triangular basin bordered in the south by the Jabal as-Sawda. The Jabal al-Machrig is located toward the northeast, and the Jabal Uaddan to the east. As compared with the Jabal as-Sawda, the Jabal al-Mashria and the Jabal Uaddan also break off in the form of large gradients in the direction of the basin. These gradients are approximately 150 meters high; those of the Jabal as-Sawda are as high as 200 to 250 meters. At the vertex of the triangle, the

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL

basin opes toward the north. The road from Misurata runs over the lower ridge into the basin; further to the east, the Wadi [redacted] Charib leaves the basin and runs northward. The edge of the [redacted] of the Jabal Uaddan turns toward the east at the eastern end of the basin, thus forming a wide opening through which the road to Zella leaves the basin. A mountain ridge projects in the north toward the basin between Socna and Hun. Its last hilly spurs run up to the northern end of the basin.

Almost the entire basin is covered with a hard gypseous crust, which, beginning from the edges of the steps, is covered with a thin layer of alluvial soil. The wadis, which originate at the scarps, cover this area. These grey gypseous areas are either shallow and covered with some sand and debris, or hilly in some places. Often they are also broken up into blocks. Sand, clay and debris usually accumulate between the gypseous hills. A sparse brush vegetation grows here.

The large oases are located in the lowest sections of the basin. The most important ones are the Socna Oasis, the Hun Oasis, the Uaddan Oasis (the actual al-Giofra is located 250 meters above sea level), the Zella Oasis, and the small al-Fogha Oasis. The Socna Oasis (249 meters above sea level) comprises 18,000 palm trees; the Uaddan Oasis (247 meters above sea level) has 30,000 palm trees.

These 5 oases have a total population of approximately 6000 to 7000 (according to the guide [redacted] Italian Tourist Club, 7,550).

CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL

These oases are located on the road leading from Misurata to the Fezzan. They follow for some distance the foot of the Jabal [redacted] and are generally located at the end of the larger wadis running down from the Jabal. Large sand piles are deposited here, and often form dunes. In some places, the sand has been blown toward the north on the low gypseous areas forming small dune fields. Brackish artesian water was found in the Hun Oasis which, however, can hardly be used for irrigation because of its high lime content. Small gardens and palm groves are located chiefly in the west of this locality which was reconstructed after the fighting of 1932. The Arab village is located north of the Italian headquarters, the old fortress is at the edge of the gypseous areas, and the airfield in the east. The mountain ridge, mentioned above, which runs toward the north, breaks the oasis chain at Hun. First there is the Socna Oasis, formerly a more important locality than Hun, which has an old fortress. Then follow small palm groves up to Bir [redacted]. The village of Uaddan, a rich oasis, is located toward the east beyond a gypseous desert and steppe. A small Italian fortress is located on a hill above Uaddan, overlooking the palm trees. The wide Wadi Bei al-Chabib, which runs along the foot of the Jabal Uaddan, is noticeable by its rows of palm trees.

Some hills, spurs of the above mentioned ridge, are located northwest of Hun. A fresh water spring, which supplies the European occupation forces, is located in these hills. The water of the other springs is generally brackish, but is used for drinking purposes

CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

by the natives. The ground water lies from 3.5 to 5 meters beneath the surface.

Rainfalls are not rare in the Giofra; they can be very heavy and last as long as 20 minutes. Hail and dew are quite common here. The temperature occasionally drops to 3°.

The vegetation is the same as in the Fezzan: palm trees (100,000 in the entire Giofra area, including the Oases of Zella and al-Foghara), mimosas, tamarinds, acacias, fig trees, almond trees, olive trees, quinces, pomegranates, apricot trees, peach trees, apple trees, [redacted], rice, barley, millet, wheat, and vegetables.

The cultivated land is divided into 2 strips, which are bordered by mud walls and trenches into which runs the water of the wells of the various gardens.

Toward the south, the road from Socna has to wind over the scarp of the Jabal as-Sawda; it runs through the Wadi Fergian along the plateau between 500 and 600 meters above sealevel. This plateau is covered with basaltic lava. A black basaltic hamada, with hills in some places, stretches as far as the eye can see. It is crossed by several wadis which are deeper toward the northern edge. The basaltic hamada ends approximately 50 to 60 kilometers to the south and the road runs though a gravel desert which turns southward.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

b) The Oasis of Sebha - Murzuch

Large Serir and hamada areas, cut by wide dry valleys and often also by deep basin-like depression (for example Fogaha), sink gradually to the east toward the oases of Edri-Brach, Sebha - Ubari, and Murzuch - Zuila.

1) Oasis of Edri-Brach

Between the slopes of the Hamada al-Hamra to the south and the dune desert of Edeyan is a small strip, filled with sand and debris from the wadis of the Hamada. Here are found only some sebkas and palm groves with brackish water wells of low yield. Starting at Hatiet Saad and Edri, an oasis chain extends toward the east, in which fresh Artesian ground water is found and used for irrigating the palm groves and gardens. The houses of Edri are grouped around a deserted fortress; the Italian fort is located further away from the village. The road runs first toward the north over a sebka, then turns toward the west and follows the edge of the gradient over some distance. The following oases are separated from each other by Serir, hamada, and sand areas: Uenzerich, Berhin, Maharuga, al-Agar, Brach. Berhin is a village with large, clean white houses which often have 2 stories. Wealthier Arabs live here; they travel with their camel caravans between Sfax, in Tunisia, and Murzuch. A new Italian fort is located in the large Brach Oasis. From here to the west are only a few unimportant oasis.

2) Oasis of Sebha - Ubari

Coming from the north at Umm al-Abid over the Gat road one reaches this oasis chain. The serir al-Gattusa is actually a hamada with

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

coarse sand stones covered with an iron crust. The palm trees grow in the wadis which come from the Serir al-Gattusa or follow closely the edge of the gradient. Small sand and clay deserts alternate here with hummocky deserts; the actual sand desert begins 4 to 5 kilometers from the edge of the gradient. The Oasis strip expands at Sebha al-JADID. Numerous fresh water wells and large oasis villages have developed here. The Wadi Gabr On, in which the oases are located, changes toward the southeast into sabkas and sandy areas without palm trees. The Italian fortress of Elena with a small settlement is located 7 kilometers east of al-JADID.

The oasis chain of the Wadi AL-AJYAL starts at al-ABYAD. An uninterrupted palm tree strip, crossed by large sabkas, runs from Ohlef along the foot of the HAMADAT Murzuch in the south and ends in some places with a 200 meter slope toward the Wadi al-AJYAL which is cut by short gorge-like wadis. Large serir alluvial fans are located between the foot of the gradient and the wadi. The road follows the southern slope. The Wadi al-Ajyal is bordered in the north by dune deserts of the RAMLAT ZALLAF and Edeyen. The dunes, which often reach 100 meters in height, overlook the wadi. The Wadi AL-AJYAL expands toward Ubari, while the dunes become lower in the north and are followed by large dunes areas with knee-high brush vegetation. Ubari is an important station on the route to Gat. The large oasis at the foot of the slope is protected by a small fortress.

Vegetation decreases in the wadi west of Ubari. A wide strip of dwarf brushes marks the course of the wadi which now moves farther away from the cliff and is followed by the road to Serdeles-Gat.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

3) The Murzuch - Zuila Oasis (photograph No 80)

The road from Sebha to Murzuch crosses the hamada of the Serir El Gattusa and runs up to the gentle descent of the Wadi an Nesciua in which the Oasis of Goddua, a small village with gardens, is located. The wadi runs along the palm tree strip farther toward the southwest. The road turns toward the south, runs over a spur of the Sirir el- Gattusa and then over a low gradient down to the oasis of Murzuch, reaching the third wide oasis strip which runs from west to east and has a palm tree strip running from Tmessa in the east to a point beyond Tessaua in the west.

Coming from the east, the first palm trees are found in the HADIYAT el-Shanaba. Large SABKHAS, which are several kilometers long and 1 to 2 kilometers wide, are located between the edge of the Sirir el-Gattusa and the Southern sand areas. Palm groves are scattered over these sabkas. A wide palm tree strip runs from the Mesciota, which is located several kilomters away, to the first small and unimportant village of Tmessa, where water is found in salt marshes. The wadi which then forms sebkas and clay plains covered with sand runs farther toward Zuila, which is located on the edge of the Sirir el-Gattusa in a shallow wadi. The white houses of the large village with its old castle can be seen far away. The caravan road follows the sandstone edge of the Sirir and then runs over the long alluvial fans. A harder roadfor automobile traffic begins at Zuila and remains outside the wadi, which is of the sandy clay type. Long dunes, 20 to 25 meters high, are located at the southern edge of the wadi. These dunes are of fine sand and behind them are shallow coarse sand areas.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The large oasis of Hammera-Umm al-Araneb is located on the edge of a wide lateral wadi filled with a firm thin layer of sand. This wadi runs over the main wadi up to the edge of the southern slope of Magedul. There is also a dune range of fine sand, which can be bypassed by vehicular traffic.

The road leads further toward the west over a spur of the Hamada. Sabkas, palm groves, and small villages are located in the wadi bed. Then follow the oasis of Traghen, the deserted ruins of Fongul near a wide sabka, Plem, and finally Murzuch, which is located on the edge of a sabka. Murzuch is partly sandy, partly pebbly. There are still salt marshes and a small saline lake east of the village. The marshes extend as far as the old castle in the city. Owing to the danger of malaria, the marshes near the castle were drained and plans were made to drain the marshes outside the village. The new fortress built in 1936, is located outside the city to the southwest. Parts of the old city walls of Murzuch are still standing. In the north the wall is covered with dunes and palm groves are found around the sabkas. In 1937, many houses in Murzuch were still dilapidated and deserted. The dunes of the Zedeyen of Murzuch (approximately 5 kilometers) can be seen in the south.

The oasis extends farther west beyond the small well of as-Zergan-Um al-Hamam as far as Tesaua and north beyond Dugial. Again and again, sabkas, which are often large salty plains with block soil and salt efflorescence, can be found here. Between them are sand and dune strips with palm trees and large hummocks with tamarisks. Villages surrounded by gardens can be found in regions with water.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Dilapidated castles are seen here quite often. West of the large Tesaua Oasis is the Wadi Bergiut with palm groves. [redacted]

A hilly serir area begins north of Tesaua, which is also partly a hamada and rises slowly toward the southern edge of the Hamadat Mursuch. The latter breaks off with a 30 to 59 meter slope toward the south. Deeply cut wadis originate in the Hamadat. The Plateau of the Hamada follows these wadis, which end suddenly a few 100 meters to the north in a slope toward the Wadi al-Ajyal [redacted]

c) Oasis of the Wadi Gatrun (Photographs 81 and 82)

Magodul is located beyond the level sand areas south of Umm [redacted] al-Aranob which is followed by a spur of the projecting Hamada, lowest gradient of the Jabal Bin [redacted] Ghnima, and then by a sand filled shallow depression which is the northern extension of the Wadi Gatrun. The road leads around this spur, runs farther toward the edge of the gradient of the Hamada, and by-passes the sandy serir areas, [redacted] especially the dune areas with sparse vegetation near the Bir Umm al- [redacted] Adam. This hole, filled with water, is approximately 10 meters deep and yields brackish water. More and more traces of wadis are found in the wide shallow depression between the long alluvial fans in the east and the sandy hills in the west. There are salt areas, low dunes with clusters of grass and dwarf brushes, small palm groves, and [redacted] thicker palm groves with wells and gardens which surround large SABKHAS [redacted] on the route to Gatrun. [redacted]

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

A small castle is used as police headquarters. An uninterrupted, often scanty palm strip, extends in the wadi bed toward the south and connects Bacchi, Medrusa and other oases up to Tegerhi. SABKHAS dunes, brush vegetation, grass clusters and palms mark the wadi bed. Tegerhi is located near the southern end of the Wadi Gatrun, which turns toward the west and disappears under the dunes. It is presumably connected with the wadi which comes from the plateau of the Jabal Dibas and in which the Uigh as-Saghira well is located. An additional wadi of the Jabal DIBAS runs toward the Uigh al-Chebir on which grow brushes and which has open and infilled water holes. A wide view appears from the Jabal DIBAS, especially toward the east where the steps of the Jabal Bin Ghnema can be seen behind a hilly region partly covered by sand.

A caravan road leads from Gatrun toward the northwest over alternatively harder and softer sand areas to the Bir al-Mistuta, on which the ruins of a desert castle are located. The Bir lies in a shallow salty depression surrounded by series of which grow dward brushes. North of the Bir Mistuta stretches a chain of long dunes 5 to 10 meters high which end just before the Bir al-Bidan where SABKHAS with palm and tmarisks groves/again are encountered.

d) The Oasis of Gat (Photograph No 79)

The Oasis of Gat is located in western Libya in the Wadi Tanezzuft, which has steep gradients and cuts deeply into the spur of the Tassili Plateau. It originates approximately 30 kilometers south of Gat and is a sharply cut valley running between the Acacus Mountain in the east and the Tassili Plateau in the west. The decomposed

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

edge of the plateau, which is called Idinen, is cut into pinnacles and clastic towers. It is called Gasr al Jamun (ghost castle) by the natives.

Pastures, acacias, and tamarisks can be found in the wadi. The Oasis of Gat is located near one of the most important places in the Sahara, where water collects and which is a base of an important caravan road between the Mediterranean Sea and the Sudan. This region has 8000 palm trees and 80 gardens. Attemps have been made to plant cotton and tobacco.

Gat has a population of 3000 Tuaregs and Haratins.

c) The Plateau of Tibesti

The plateu of Tibesti is a mountain chain up to 3225 meters high, the highest parts of which consist of volcanoes and volcanic substances. Two spurs of this plateau, which are gradually becoming lower and one of which has hardly been explored at all, extend in the direction of the Kufra Oasis in the north-northeast and of the Tummo Mountains in the northwest. The western spur is better known. Bardai (980 meters above sea level) is loacated in a wide basin of this spur between the mountain ranges. Bardai is a village with wells, palm trees, and a French fortified station. The mountain region is apparently surrounded in the north be serir areas which are slowly descending toward the north and the east and are cut by a number of wadis originating in the mountains. No water is available in the vicinity of the mountainous region of Tibesti; there are only a few wells near the northern spur. Watering facilities are found only in the mountainous region proper, of which the watering places located in Italian

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

territory are of local importance only. The french section of this region, however, receives some rainfall and could be used as a base for operations from south to north.

3. The East Libyan Desert

The East Libyan desert is a large and extremely level area rising gradually from the Mediterranean Sea to the mountain region of Tibesti and the plateau of Erdeke. It consists of thin layers of lime and sand stone covered with gravel and sarir or with sand and dune fields. A zone of desert depressions extends from west to east through the Libyan desert at the 29 degree of latitude. They are called by the Italians "Desert Depressions of the 29th Degree of Latitude " and include, from west to east, the oases of Marada, Gialo, and Giarabub. The large oasis basin of Siwa and the Qattara Depression are located farther east.

South of this depression zone extends the immense, completely dry gravel area of the sarir of Calanscio, the northeastern part of which (south of Giarabub), consists of the "Great Erg" sand field.

There are other depressions south of the 26 degree of latitude. Ground water rises to the surface in these depressions which are, therefore, of importance to the desert traffic. The most important are known as the Tazerbo oasis and the water places of Zighan. The Kufra Oasis, with numerous depressions, is located farther south.

Two only recently explored high mountain ranges, the Jabal Archenu (1455 meters) and the Jabal 'UWAYNAT (1934 meters) are located in the southeast, parly on Egyptian territory. They are composed of granite

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

and other crystallines and are inhabited by a few people only, since there are very few water wells. A natural rock cistern yielding 150 liters of water per day is located in the Jabal Awenat.

4. The Libyan Desert Oasis Groups

a) Marada

The Marada Depression is located on the 29 degrees of latitude and extends from the basin of the Abu-Naim in the west, via the Marada settlement, to the SABKHAT-al-MEHAYRIJA in the east over a distance of 180 kilometers. The difference in height between the depression and the desert area which starts in the north with a sharply marked rocky slope, is 20 to 50 meters. The depression itself consists of a number of basins with palm trees (approximately 600) and gardens bearing fruit, grain, and vegetables. The oasis has many wells and water places. There is sufficient good water with a somewhat salty taste.

The Marada settlement has a population of 1118, engaged mainly in agriculture and trading, and approximately 50 stone houses and numerous sheds. Marada is located in the center of the main basin which can be approached through an opening in the steep northern edge.

b) Gialo (Photograph Nos 87 through 89)

The oasis group of Gialo comprises the Gialo Oasis with its main city of al Erg, the Augila Oasis which is located 30 kilometers to the north west, and the Gicherra Oasis which is located to the north-east. This oasis group is of importance since it has ground water and is located at the intersection of 2 main caravan roads (Mediterranean

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Sea - Kafra - Wadai, and the east-west road through the "Oases of the 29 Degree of Latitude").

The Gialo Oasis has a lime-clay bottom with a deep ground water level. There are 466 wells with somewhat brackish water which irrigates the land under cultivation. There are approximately 50,000 date palms and 100 gardens which grow barley, wheat, vegetables, and fruit.

The 2762 Arabic - Libyan inhabitants (census of 1931) live in 3 villages (Al Ergh, al-Lebba, and ASH-SHIRUF [redacted]). Al Ergh is the seat of the administration for the entire oasis group and has an administration building, living quarters, military barracks, an Italian-Arabic school, an automobile repair shop, a fuel depot, a hospital, an airport, and a radio station. The villages h ve low houses without windows and narrow winding streets. The people are occupied in farming and trading. Domestic animals available are goats and donkeys.

The Augila Oasis stretches from north to south, has a limestone bottom, and is equipped with sufficient ground water. The best well is the ancient Sibyllen Well to the north of the oasis (Bir as-Sabil). The 30,000 date palms of the oasis and the wheat, vegetable and fruit gardens are irrigated by 100 wells. Dates are the chief item of export.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The population (about 1500) speaks a Berber dialect, but understands Arabic as well. Augila has approximately 500 primitive houses, including several mosques.

The Gicherra Oasis has 350 inhabitants who care for several thousand date palms and numerous well planted gardens. They live in modest sheds of clay and palm-straw.

c) Giarabub

The Giarabub Oasis comprises the easternmost part of the "Libyan Desert Basin of the 29 Degree of Latitude." Its eastern part extends into Egyptian territory within a distance of 65 kilometers of the great Siwa Oasis. The basin of Giarabub consists of 3 irregularly bordered basins which are inter-connected by narrow passages. These 3 basins are in turn comprise smaller basins, sharply bordered and surrounded by the desert plateauwhich is approximately 100 meters high.

The rocky, sharply indented edges of the northern section of the oasis resemble an indented coastline. Hard limestone beds form the gradients of the steep slopes. Large sand fields and dunes of the "Great Erg", which lies in the south, extend along the sothern part of the oasis basin and obliterate the edge of the basin.

The oasis basin (total area, 694 cubic kilometers) is subdivided into a number of smaller evenly surfaced basins with scattered hills, rocky plateaus, and mushroom rocks. In the center of the basins lie reddish, often swampy salt-clay areas, in which the ground water of the edges of the basins gathers into salt lakes, including the Bahar Melfar (72 hectares) in the east along the Egyptian border, the Bahar

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

al-Fassa (330 hectares), and the Bahar al-Arrashya (940 hectares). The salt plains are surrounded by a wide border of yellow sand. The basin near the cliffs is sharply cut by gullies which are several meters wide and a few meters deep. They have to be by-passed by all traffic and cannot be crossed because their edges are very rough. There is little vegetation, with the exception of some bent-grass on the edges of the salt plains. The date palms grow irregularly and at great intervals. They form more compact groups near the small basins, but are covered with sand. A larger and well cultivated date palm grove is located near the village of Giarabub.

The only permanent settlement of the oasis is the village of Giarabub, a religious settlement of the Senusi sect. The houses of the settlement, which have thick walls and no windows form a castle-like rectangle. Very few gates lead to the interior which is crossed by a main street and a number of narrow streets. A road leads to the mosque and the tomb of the founder of the Senusi sect. The other buildings include schools, shelters for Koran students and large living quarters for the Senusi families.

The 278 inhabitants of the village (1937 census) are members of the Koran school, or former negro slaves who cultivate the irrigated garden land adjacent to the village. A pipe line runs from the main well of the settlement to the garden land. There are also several other open wells. The water is somewhat salty and bitter. Barley, wheat, vegetables, potatoes, peppers, tomatoes, pumpkins, melons, lettuce and pomegranates are planted in addition to date palms.

(d) the Kufra Oasis

All oases of the Italian southeastern part of Libya, which ex-

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

tend from the Tazerbo Oasis in the north-west beyond Bir Zighen, Rebiana, and the Kufra Oasis, to the mountain region of the Archenu Jabal and the 'Uwaynat Jabal, over a desert area of 600 kilometers, are generally known as Kufra Oases. They are of two different types, namely of the basin oasis type to which belong most of them, and to the mountain oasis type of the Archenu Jabal and Jabal Awaynat.

The Tazerbo Oasis is an oval basin of 165 square kilometers, which cuts approximately 30 meters into the surrounding desert area (200 meters above sea level) and opens onto a wide shallow depression toward the north-east. The entire area is approximately 1500 square kilometers.

The oasis is of importance because it is located on the southern edge of the completely dry Sirir of Calanscio. It is the first water place south of the "Oasis Chain of the 29 Degree of Latitude". Ground water can be found just a few meters below the surface and there are about 45,000 palm trees. Many small settlements (total population about 700) are located near the water places at the basin's edge. The basin of Zighen, which is located 70 kilometers further east, comprises about 500 square kilometers and consists of a small basin and a large basin, both very shallow (hardly 10 meters deep). These basins are covered with numerous small sand hills on which grow, in some places, scanty brushes, dry roots, or trunks of palm trees. The Zighen area can be distinguished from the surrounding desert only by its scanty vegetation. The region is not inhabited. It is an important place, however, for caravans going to Kufra, since ground water can be found 1 meter below the surface. There are 6 wells, the most important of which is that of Bir al-Harash with palm trees. The water of the well of Bir al-Asash is brackish, but can be used for drinking purposes.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The Bzema Oasis, which is located 50 kilometers south of Zighen and half-way between Tzerbo and AL-JIYUF (Kufra), is a crescent-shaped basin on the slopes of the cliffy Bzema Jabal. This basin is a shallow salt lake with palm groves on its edge. The main settlement which is located on the edge of this basin is Bzema (population,, 80; mostly stone houses). There is sufficient fresh water. Wheat is grown under the palm trees.

The Rebiana Oasis is located 73 kilometers south of Bzema, and 130 kilometers west of al-Jiyuf (Kufra), and covers 9 kilometers from south to north. In the north, it extends into a 4 -kilometer long salt lake (SABKHA Duel-al-Bahri). The desert area rises up to 150 to 170 meters above sea level (Rebiana Jabal, 538 meters) in the eastern part of the basin. There are several small settlements under the palm trees with a total population of 365.

The Kufra Oasis itself consists of 3 irregular basins, namely the Al-Hawari in the north, the al-JIYUF in the center, and the al-Tallab in the south. The surrounding desert area, 450 meters above sea level, breaks off in sandstone gradients toward the basin. The passage between the basins is wide and low; The central and southern basins converge and form a depression 20 kilometers wide and 50 kilometers long, which is called WADI-AL-HAFRA.

The ground water of the basins forms small salt lakes in various places. It can be found relatively close to the surface (center of the basin, 4 to 5 meters; near the edges, 20 meters). It is brackish in various places.

Bent-grass and other plants grow in the vicinity of the lakes and salt plains. A few acacias, tamarisks, and scanty brushes grow

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

a little farther away, while the sirir plateau of the desert area is almost without vegetation.

The Kufra Oasis is populated rather densely (4,700 in 1937 including 900 negroes). Its 6 settlements are: [redacted] AL-JIYUF at-Tag, Buma, Buema, as-Zurgh, [redacted] AT-TAYLIB, and at-Tallab which are located in the area of large date palm plantations and gardens. In addition to more than 100,000 date palms, there are several hundred wild olive trees. Fruit trees (apple, peach, apricot, orange, lemon, fig, mulberry, and some wine) grow in the gardens as well as barley, millet, wheat, and vegetables and fruit (tomatoes, onions, melons, cucumbers, etc).

The gardens are fenced in by clay walls. Each garden has a well.

The main settlements of the Kufra Oasis are the twin settlements of [redacted] AL-Jiyuf, an industrial center with a population of approximately 2500, with a market place, and an Italian-Arabic school and hospital; and at-Tag, the holy Senusian city with a mosque and other religious buildings and houses of the Senusian families, administration buildings, a radio station, and an airport which is located farther north on the edge of the steep slopes of the sandstone plateau.

Trade with Egypt and the Sudan, which formerly was very active, has decreased since the Italian occupation (January 1931) because of the people's resistance.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

C. [redacted] DESCRIPTIONS OF THE MOST IMPORTANT LOCALITIES AND PORTS

1. Apollonia (Marsa Susa)

Apollonia is an ancient city with a population of approximately 1,000. It is the northernmost city of Cyrenaica and an important harbor, [redacted] connected with Cirene by an excellent road.

This small city with its straight streets, [redacted] crossing each other perpendicularly, is very picturesque. The [redacted] terrain rises behind the city.

The city's water supply system consists of a five-kilometer [redacted] pipe line from the Susa River and five public wells. Numerous private water pipes take care of distribution. The water is also used for irrigation. Apollonia is equipped with electricity as well as with a post office which has telephone and telegraph facilities.

The old ruins are located east of the city; the forts in the eastern and western part.

The landing beach (Marsa Susa) has no wind protection. The water is ten meters deep at a distance of 3 to 3.5 kilometers from the coast. Ships can dock at a landing pier or on two small, sandy beaches. The water pipe line is located 500 meters from the sea. The ships of the coastal navigation service dock every two weeks. Military seaplanes land on the waters of Pietro Degli Angeli. The coastline west of Apollonia is high and steep; it is lower in the east.

2. Barce (Population 8,800)

Barce is located half-way between Bengasi and Cirene, on the main highway, 30 km from the sea (Tocra). The city is located 285 meters above sea level, on the gradient of the Jabal, below the plateau, in an undrained basin of 10 to 15 kilometers in diameter, filled with red alluvial fertile earth. This area is an excellent starting point for modern colonization. The settling of Italian farmers, under government supervision, takes place continually in the vicinity of Barce which is an important center of Cyrenaica and one of the most beautiful towns in the colony. The streets run mostly straight and [redacted] cross each other almost perpendicularly. Most of the

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

houses are new and have moorish arches and beautiful wooden doors.

There are the following public buildings: district commissariat, town hall, police headquarters, department of agriculture, colonization bureau, post office and telegraph exchange, house of the Fascio [Fascist Party Hq.], savings bank, and hospital. There is also a repair shop and a motion picture theater.

A railroad station of the Bengasi-Barce railroad line is located at the southeastern end of the city.

Barce also has an airfield. An ancient well, which is 45 meters deep and still in use today, is located one kilometer north of the airfield. There are three additional wells in the city.

Army barracks and training grounds are located southwest of Barce.

Primarily grain is plated in the basin around Barce, in addition to all kinds of vegetables. Trees of all kinds are grown along the border of the basin.

3. Bardia (Population 2,370) (Photograph No 66)

The village of Bardia is located 116 meters above sea level overlooking the harbor of Porto Bardia. Its white houses can be seen from the sea. Its population consists primarily of natives. Bardia has government buildings, a post office with telegraph and telephone facilities, schools, and a first-aid station. The village and harbor of Bardia have a sufficient supply of good drinking water. The water pipe line extends as far as the harbor.

A small power plant and slaughterhouse are also located in Bardia.

The harbor of Bardia is a sheltered bay whichopens toward the northeast. The harbor is bordered by almost vertically sloped rock walls several hundred meters high. The bay is dangerous during northeast winds. The inlet of the bay is between 5 and 15 meters deep. Ships of medium tonnage can enter the harbor. Ships of the coastal navigation service dock every two weeks.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

A radio station, a small repair shop, and a filling station are also available in this city.

There is no regular service at the airfield of Bardia. The civil and military airfield of Amseat and the customs house are located further east toward the Egypt border.

The coastline toward the Egypt border is high and slopes steeply toward the sea. Numerous rivers flow into the Mediterranean along this coast. Border fortifications are located near Bir Ramla.

4. Bengasi (Photographs No. 38 to No 40)

Bengasi is the capital and main seaport of Cyrenaica. Its population of 50,751 (1936 census) includes 16,000 Italians and 2,400 Jews.

The "Old City" is situated on a promontory and is surrounded, toward the hinterland, by salt lakes. The city has expanded toward the south over an isthmus between the salt lakes.

The old harbor was originally a salt lagoon with a channel toward the open sea. The harbor is located southwest of the "Old City" and is bordered in the southwest by the Giuliana Peninsula. It is protected in the north by a mole. The new harbor was built further west in front of the old one. The harbor opens toward the north between two moles with an inlet 80 meters wide. Plans have been made to dredge the harbor to a depth of 8 meters. The old harbor is constantly silted and a useful depth of only 4 meters can be expected. A cable railway for loading of salt from the lagoon of Al-Bunta Sabkhah is located in the southeastern corner of the old harbor.

The city covers an area which is not quite one kilometer wide between the sea and the salt lakes; it extends beyond the isthmus in the south where the suburb of Berca is located. Bengasi consists of the old Arab district which is poor, with the exception of the market and the City Hall plaza, and the modern district which extends along the harbor toward the south.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The streets in the Arab district run straight and parallel. The modern impressive Italian-built buildings, such as the Government Palace, the administration buildings, and the new theater are located along the modern and magnificent boardwalks of the harbor. A new cathedral has been built and new streets and parks have been developed. The monument to the war dead is located on the Giuliana Promontory. The luxuriant beach grounds of the Lido extend toward the south.

Consulates, banks, the main post office, military headquarters, numerous military barracks, excellent hospitals, a quarantine station, a meteorological observatory, a coastal radio station, and other installations are also located in Bengasi.

The State Sabkhah Salt Mine is located south of the city.

Water must be used very sparingly, since the 9 deep wells in the southeastern section of the city cannot supply the city with sufficient water. Water tanks and mains with good water are located in the harbor district. Several power plants are located in Bengasi.

The railroad station is located in the southeastern part of the city. There are railroad connections with Barce and Soluch.

A seaplane base is located on al- Bunta Sabkhah.

In addition, Bengasi has two airfields: 1) The al Berca airfield for military and civil aircraft located 2.5 kilometers southeast of Bengasi, equipped with fuel depots, located in the former quarries, and entrenched fuel tanks; and 2) the Benina military airfield located 20 kilometers east of Bengasi, equipped with military barracks, underground quarters, and ammunition depots. A fuel depot is located in ar-Regima, 10 kilometers farther east, where originates a pipe line which runs to the airfield. Benina is located on the Bengasi-Barce railroad line.

Handicraft products of Bengasi include woven fabrics, rush mats, rugs, drapes, and gold and silver jewelry. European industry consists chiefly of factories for the processing of tuna fish. Foodstuffs, tobacco, textiles, iron ware, drugs, and pottery are imported. Eggs, sheep, woolens, hides, rugs, and mats are exported.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

South of Bengasi there are large areas of esparto grass, which is used as a fibre (cellulose).

5. Cirene (Population 3,000)

Cirene is located on a high chain of hills, at the steep northern edge of the Jabal Plateau, 620 meters above sea level.

This ancient city extends over 2 hills and one depression. Here, just as in ancient times, the main activities of the city take place. The small Ghegab Square is the center of the village.

The business life is concentrated around Ghegab Place. The new district of Cirene is located on the Ain Hafra Hill.

Cirene has an administration building, a post office with a telegraph exchange, a bureau of agriculture, a house of the Fascio, and a forest guards headquarters. The ancient excavations of Cirene are of world-wide renown. An office for excavations and and an archaeological institute have been established.

Cirene is the center of a large-scale Italian colonization program which is to promote agriculture, plant trees, and increase the acreage of cultivated land constantly. The Italians are being settled east and west of Cirene. Stations for experimental farming have been set up.

The ancient Apollo Well still supplies the city with excellent water.

Cirene is located at some distance from the main highway, but has good connections with it.

The area surrounding the city is either fertile soil or brush land, with the exception of some sections of unproductive lime soil.

6. Derna (Population 11,000) (Photographs Nos 61 through 63)

Derna is a pleasant and hospitable city located 16 meters above sea level on both banks of the Derna River, which cuts deeply through the chain of hills behind the city. This hilly country changes abruptly into a plateau, which is generally 260 meters high and rises in places up to 360 meters. This plateau protects Derna from the hot southern

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

winds so that the winters are mild and the summers moderate. The coastal area is 2 kilometers wide. The city is located in a very fertile oasis with vegetable gardens and palm, banana, fig, and other fruit tree plantations. The houses of the city, which are white, are generally surrounded by vineyards.

The Italians have divided Derna into the following four sections:

a) Bu Mansur, which is located on the right bank of the Derna River around the harbor.

b) al-Gebla, which is located on the left bank of the Derna Riber. Adjoining al-Gebla to the northwest along the coast are the modern districts with government buildings, a post office, the house of the Fascio, and hotels. There are new bathing establishments on the coast.

c) al-Bilad, which is the old Arab city, has a city hall, narrow streets crossed by arcades, and arcades over house entrances.

d) al-MUGHAR, which extends west of al-Bilad. The new slaughterhouse is located in the northwest section.

Palm trees, gardens, and small canals, which are often covered with clear water, border the streets.

New market installations are located in the center of the city.

A mosque with 42 domes is one of the striking structure of the city. Fortifications are located on both sides of the mountain pass. Derna has a police station, military headquarters (barracks,) a hospital with 90 beds, a naval radio station at the harbor, a customs house, and a health department. A sufficient supply of good water is available, which is not true of any other city on this coast. There are several water reservoirs with pipe lines and a large irrigation system. Derna is equipped with electricity.

The harbor is protected by two moles, often silted by sand and sea-weeds, and is only navigable by ships with draught of less than five meters. At the pier, the draught of the ships cannot exceed 3.5 meters. The landing place is not sheltered.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The ships of the Coastal Navigation Service dock in Derna every two weeks.

A seaplane base is located at the entrance of the harbor. A military airfield is located 14 kilometers southeast of Derna.

Derna is [redacted] on the coastal highway from which a highway branches off southeast of the city into the interior to al-MARJI [redacted].

The population of Derna engages in trade and horticulture. Most consumer goods required are imported. Woolens, hides, butter, and cattle are exported.

7. Garian (Photograph No 24)

Garian is situated 717 meters above sea level on the Jabal Plateau, 90 kilometers from Tripoli, to which it is linked by an excellent highway.

Garian, a modern center of colonization in an area which was not long ago occupied by cave dwellers, is a creation of Fascist Italy. It has beautiful streets and new buildings occupied by offices for administration and colonization.

Garian has a city hall, a house of the Fascio, a post office, a catholic church, a mosque, [redacted] schools, and electric facilities. A tree nursery of considerable importance and large experimental fields for colonization are located in Garian. Water is supplied by wells.

The large shallow depression of Tegrinna, covered with loess-like quicksand, is today a growing region of great importance for tobacco. Olive trees predominate in the vicinity of Garian. In addition, local condit ons are favorable to the planting of fig trees and grain.

Garian is an important road junction. Roads branch off [redacted] from Garian [redacted] to Jefren in the west and Mizda in the south. A caravan road farther south [redacted] leads to Garian from E. Tarsin.

An emergency landing field is located near Asabaa.

The administrative district of Garian includes Chicla and Asabaa. The number of Italian colonists in the area is not known.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

8. Homs (Population 2,553)

Homs is located on the spurs of the Merghob Hills and is surrounded by plateaus.

Its importance is due to the fact that the remains of the ancient city of Leptis Magna, which is located 2 kilometers east of the Lebda Valley System, attract many visitors, Homs is the center of a large colonization area and the main city of the district. Italian colonists are being settled successfully in the hilly country around Homs.

Homs is a beautiful city with parks and palm trees, new government buildings, military buildings, a Chamber of Commerce and Industry, a post office with telegraph facilities, hotels, new market facilities including a fish market of considerable importance, mosques, and military barracks. A fort is located on the plateau southwest of the city.

Cisterns supply the city with water which must be used sparingly. Homs has electricity.

Homs is an important center of the esparto grass industry and has daily bus connections with Tripoli, Misurata, and Al-Gusbat.

The harbor of Homs is protected by a mole 300 meters long, but is navigable only by small ships. The bottom of the anchorage is rocky. Ships of the Coastal Navigation Service dock in Homs every two weeks.

9. Misurata (Population in 1936, 9,000)

Misurata is, after Tripoli, the most important city of Tripolitania, because it is a large market, a lively trade center, and the seat of the General Commissariat of the District of Misurata. It is located 6 meters above sea level on the coastal highway and is surrounded by a fertile oasis.

Misurata and the harbor of Misurata Marina, which is located 10 kilometers east of the city proper, form one community.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The appearance of this beautiful old city was markedly improved recently. Steets, buildings, and water supply and sanitary installations were improved. The old mosque was repaired. New streets, public and administrative buildings, schools, market facilities, and a Christian cemetery were built. A new aqueduct makes the distribution of water possible through public wells.

The main street is the Corso Vittorio Emanuele III which runs from west to east into the market place, where the post office with telegraph and telephone facilities is located. A civilian hospital is located in the northern part of the city. There are also a military club and a motion picture theater. Misurata has electrical and radio facilities.

A branch road ~~junction~~ leads to Misurata Marina. This small harbor is protected by the low, rocky peninsula of Ras Zarrugh and is navigable only by small ships. The anchorage is sandy and rocky and offers little protection. Ships of the Coastal Navigation Service dock here.

Misurata Marina has only one important street on which the most important buildings are located. A well yielding non-drinking water is located 150 meters from the coast.

There is an emergency landing field, but no regular air service.

Misurata imports flour, barley, tea, coffee, sugar and cotton fabrics; it exports dates, woolen fabrics, and rugs. Wooven woolen goods and rugs are the chief products brought to the market of Misurata although the grain, fish, and oil markets are also important. In addition, there is some trading in cattle.

A secondary highway leads from Misurata to the interior of B. Dufan, where it branches off to Sedada in the south and to Beni Ulid-Scemech in the southwest.

10. SABRATA ~~Sabratha~~

Sabratha is located on the coastal road and railroad line from Tripoli to Zuara; it has a railroad station.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Sabratha's archaeological discoveries make this place the most important archaeological city in Libya after Leptis Magna. The Archaeological Museum is of great interest. The ruins of an amphitheater are located on the ridge of a hill.

Modern Sabratha is a fishing village (tuna fish fishing).

It has a post office with telegraph and telephone facilities and newly built public buildings. The streets are bordered by cypresses. Drinking water is available.

Ships up to 100 gross tons can dock in the small bay of Marsa Sabratha.

11. Tobruk (Population 4,130)

Tobruk is located 30 meters above sea level on the southern coast of a small peninsula which projects into the sea toward the east and thereby provides excellent protection for the harbor. Tobruk is the main city in Marmarica and an important naval base. It is evenly constructed and almost completely built by Italians. The modern city walls extend to the harbor. The main street is Via Roma with the most noteworthy business establishments. Beautiful boardwalks along the shore were constructed recently. Tobruk has a city hall, a post office with telegraph facilities, schools, a college, a hospital, a new catholic church, bathing establishments, parks, and a slaughterhouse.

Tobruk has a large fresh water cistern. The low quality of the water yielded by the old installations is made drinkable through a chemical process. The water, however, must be used sparingly. Some wells yield brackish water.

The natural harbor of Tobruk, which is sheltered from the wind, is the best in Cyrenaica; it is 3.8 kilometers long, 1.5 kilometers wide, 13 meters deep in the center, and 10 meters deep at a distance of one kilometer from the shore. The landing places are also protected. The harbor has three moles and is used primarily as a naval base. It is equipped with a coastal radio station and a semaphore. Ships of the

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Coastal Navigation Service dock here every two weeks. A military seaplane base is located in the southern part of the city.

A military airfield is located in the northeastern part of the city with two large fuel tanks and radio and meteorological service. Another military airfield is located at al-Adem, 20 kilometers south of Tobruk.

The population engages in trading on a small scale.

12. Tolmeta

Tolmeta is a village with a population of 400, the majority of whom are moslem. It is located on a small promontory in the lowlands, at the foot of a chain of hills sloping toward the sea. The well-preserved ruins of the ancient city of Ptolemais make this village important.

Tolmeta has a post office with telegraph and telephone facilities, a military headquarters, a customs house, and fuel depots.

The village is supplied with drinking water by draw wells.

The coast is protected by a number of sandy cliffs. A small bay with a wooden pier for sailing vessels and barges is located between these cliffs. The anchorage is unprotected. Ships of the Coastal Navigation Service dock here every two weeks.

13. Tripoli (Photograph Nos 10 through 12)

Tripoli is the capital, the residence of the Governor General, and the center of political and economic activity of Libya. Its 1936 population of 102,728 included 35,510 Italians. The "Old City", which is located on a peninsula, is inhabited by natives and surrounded by a city wall. It has not yet lost its old oriental character. The "Old City" is in sharp contrast to the modern "New City" in the south and southeast, which was built by notable architects. The public buildings and apartment houses are impressive and very modern. The Turkish castle, which is occupied by the Governor and the Secretary General of Libya, is located in the easternmost section of the "Old City." The wall of the "Old City" was torn down in the vicinity of the castle to make room for modern streets. The Piazza d'Italia is the center of the city, from where large streets branch off. Beautiful parks with

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

palm trees and beardwalks lined by magnificent buildings are located along the shore. The new palace of the Governor General at the southeastern end of the Corso Vittorio Emanuele is a noteworthy work of architecture. It is surrounded by beautiful gardens.

The new Italian city extends into the Oasis of Tripoli toward the south and particularly toward the east. This city is also surrounded by a city wall which, however, leaves room for further development.

As a modern capital, Tripoli has many public buildings, schools, banks, hotels, and various European consulates. A new cathedral with a 60 meter high belfry, a theater, a motion picture theater, a post office with telegraph and telephone facilities, and other public buildings are located on the Corso Vittorio Emanuele. The hospitals are of the European type.

Tripoli has an archaeological museum and a meteorological observatory.

A power plant supplies the city with electric current.

The city is sufficiently supplied with good water. A completely new and large water supply installation with two large reservoirs has been built. One reservoir is located in the vicinity of the monument to the war dead which is located at the highest point of the city and is visible from afar. The water distribution network supplies Tripoli with 11,000 cubic meters of water per day. The navy has an 80 ton tank-ship. The port piers are equipped with water pipes.

The harbor of Tripoli is located along the shore of the "Old City" and is sheltered from the wind by two moles. The depth of the inlet is nine meters, that of the center of the harbor 6 to 7 meters, and that of the roadstead is 22 to 30 meters. A section of the harbor is used as a naval base. The harbor has a railroad siding, a ship repair yard, a radio station, and a health department with a quarantine station. Modern warehouses with a total capacity of 25,000 tons are located behind the Cagni Pier. A grain elevator with a capacity of 40,000 tons is located in the northeastern corner of the pier. A fuel

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

dump (drums) is located on the south pier of the fuel mole and two other fuel depots are in the oasis south of the city.

The harbor handles a considerable amount of steamship traffic as well as coastal traffic. There is a seaplane base in the western section of the harbor.

The airfield of Manzini, at the MALLAHAH (salt-pit), is located 10 kilometers east of Tripoli and one kilometer south of the sea coast. The airfield has road and railroad connections via branch lines of the Tripoli-Tagiura railroad and handles civilian as well as military traffic. A second airfield, known as Enea Reggano, is under construction near Castel Benito, 23 kilometers south of Tripoli. It is connected with Tripoli by road.

Sheds, underground fuel tanks, ammunition depots with concrete covering, military barracks, workshops, and a power plant are also located in Tripoli.

There are railroad connections with Zuara, Tagiura, and Garian. One railroad station is located in the southeastern, another in the southwestern section of the city.

The Piazza Italia is the starting point of numerous local and out-of-town bus lines. Good coastal roads lead to Garian and Tarhuna.

Tripoli's handicraft products include silk, wool, and cotton fabrics. Gold and silverware are also produced. Industrial enterprises include mills, tobacco factories, breweries, tanneries, and construction firms. Cattle, eggs, esparto grass, sponges, canned tuna fish, and skins are exported. Fabrics, flour, wine, sugar, tea, rice, metal, and pottery are imported.

The lowlands in the vicinity of Tripoli are barren and sandy in the west, but have palm trees and gardens in the east and south. Italian colonists are being settled here, and the oasis is constantly expanding.

The MAJANIN Wadi reaches the seacoast east of the city.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

A chain of dunes 60 kilometers long and 15 kilometers wide surrounds the oases of Tripoli and Tagiura.

14. Zliten (Population 4,000)

Zliten is located more than 3 kilometers inland on the Misurata-Tripoli road. The Zliten Oasis extends to the seashore as far as the harbor of Zliten Marina.

Zliten is a beautiful city and is considered as the "Holy City of Tripolitania" because the tomb of a Moslem saint is located there. A beautiful mosque bears the saint's name.

The city is arrounded by a wall which was recently improved and repaired. The city hall with a tower and clock, a post office with telegraph facilities, a savings bank, a hospital, schools, hotels, the district administrative building, office buildings, apartment houses, market facilities, and a stock-yard were built recently.

New, wide streets and squares with palm trees complete the pleasant picture of this city.

Zliten is a market of considerable importance. It is an oil producing center, has an important cattle market, and is known for the typical industries of the natives (fabrics, rugs, metal ware).

The city has a sufficient supply of good water and a pipe line.

Zliten is also of importance to caravans. The caravan road to Beni Ulid starts here; in addition, the highway to B. Dufan branches off from the main road.

Carabinieri [Italian uniformed police] barracks are located on the seacoast at Zliten Marina, as well as a small fort, a customs house, and several water reservoirs from which good water is pumped to Zliten. An emergency landing field is located between the harbor and the city. The harbor is small and its anchorage offers little protection. Archaeological discoveries have been made near Zliten.

15. Zuara (Population 8,408)

Zuara is the first Libyan city along the seashore east of the Tunisian border. It is a small city in the middle of a fertile oasis

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

which extends 8 kilometers along the coast. The oasis consists of palm, olive, and fruit trees; vegetables and grain are also grown.

Zuara is notable because it is the only Berber city on the African coast of the Mediterranean.

New buildings, a new market, military barracks, and business establishments were recently constructed. The new post office building with telegraph and telephone facilities is located in the main square. The government buildings are located in the Vittorio Emanuele III Square.

Zuara also has various schools, a meteorological station, a military hospital with 200 beds, and a power plant.

Wells supply the city with water.

Zuara and Zuara Marina, a harbor located east of the city proper, form one community. Half-way between Zuara and Zuara Marina is the local railroad station of the Tripoli-Zuara railroad line.

The Harbor Office of Zuara Marina is located on the small rocky peninsula of Ras Giogghip. The harbor is neither sheltered from the wind nor deep. The mole is 200 meters long.

The population of Zuara engages, in addition to farming, in fishing, especially in sponge fishing.

The seacoast west of Zuara is low, sandy, and in some places covered with brush. In the last rise sand dunes, beyond which the terrain gradually becomes hilly.

Zuara is located on the coastal road. Other roads branch off from here to al-Assa on the Tunisian border and to the oases of the Jabal in the south.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

D. DETAILS ON ROADS AND PASSABLE MOTOR ROUTES

1. Coastal Road (Litoranea)

The Coastal Road is a wide highway of considerable military importance. It was opened to traffic in 1937 and follows the Libyan sea coast for more than 1,800 kilometers, except in Cyrenaica where, from Tocra to Derna, it runs over the Jabal Achdar plateau.

The Road comprises a level and fully asphalted roadway, 5 meters wide, and two lateral footpaths one meter in width. The roadway is composed of layers of lime gravel covered with asphalt. At regular intervals are found the houses of road supervisors which offer facilities for motor vehicle repairs.

The following is a detailed description of the Road:

0 km [redacted] Tunisian border. From the border to Bu SHIMMASH [redacted] the Road follows a narrow strip of land, barely one kilometer wide, flanked by a salt pit and the sea; then it leads through a plain bearing steppe vegetation.

21 km Bu SHIMMASH [redacted] (Pisida) - Artesian well (40 cubic meters of brackish water per hour) and an ordinary well (1,000 liters of brackish water per hour).

The Road follows a completely level stretch of terrain between lagoons on the left and salt pits on the right; swamps [redacted] along the road during the winter .

23 km Grove of palmtrees.

26 km Airfield.

39 km Zelten - Numerous wells, partly obstructed; two of them supply 8 cubic meters of drinking water per hour; the others yield brackish water.

41 km Road supervisor's house- well yielding drinking water.

58 km Saniet Amor Ben Milad - two wells yielding 1,000 cubic meters of drinking water per hour. The Road passes coastal dunes and a lagoon.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

163 km Gargaresc- in the vicinity of Tripoli the Road is flanked by Australian acacias, tamarinds, and eucalyptus trees.

The Road crosses the dry Wadi of MAJANIN and the railroad line; then it enters Tripoli via the Corso Sicilia.

170 km Tripoli has several wells drilled by the natives. The city's water supply is assured by the aqueduct of Mellaha and the new communal aqueduct of Bu MILYANAH. The spring of Fort Haide is connected with the Bu MILYANAH aqueduct and is fed by two artesian wells located at the Gate of Air Zara, each of which yields 200 cubic meters per hour. The water, after having been purified, is piped into a suspended tank at Dahra in the highest section of the oasis, which is the distributing point.

176 km SUQ AL-JUM'AH - MALLAHAH Spring: artesian well yielding 400 cubic meters of drinking water per hour.

178.5 km The Pietro Manzini Airport is passed on the right of the road.

181 km Passing the AL-MALLAHAH Salt Pit on the right the road crosses the connecting canal to the sea; on the left, coastal dunes. The Road leads over a depression.

188 km Tagiura - drinking water; artesian well (250 cubic meters per hour), and ordinary well (200 liters per hour).
The Road crosses the railroad tracks and meets the road coming from Tripoli via Fornaci.

Flanked by eucalyptus trees, the Road turns towards the sea; on the right, small hills under forestation.
On the right extends the fertile region of Sbabil with drinking water: wells (200 liters per hour), spring (200 liters per hour).

Beyond this point the steppe gradually becomes barren and soon follows an extended area of dunes bearing , in places, vegetation consisting of acacias, tamarinds, and even stone-pines.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

212 km Stone bridge over the Wadi ~~el~~ ar-Raml; On the far side the Road circumvents the dune region which is followed by small vegetation-bearing oases.

230 km Stone bridge over the Wadi el Maid.

231.7 Gasr Garabulli (elevation 42 meters); drinking water, artesian well (350 cubic meters per hour), a group of artesian wells (600 cubic meters per hour), and a group of ordinary wells (200 liters per hour).

240 km Stone bridge over the Wadi Turdjurt.

245 km Gasr Chiar (elevation 133 meters); drinking water; well(1,000 liters per hour). The road crosses a plain which is covered with rather dense growths of olive trees, fig trees, palm trees, and vine.

254 km Littoriano. The Road leads over a series of wadis and approaches the sea.

266 km ~~Bandiq~~ FUNDUQ an-Nagazza - drinking water; well (200 liters per hour).

The Road winds through the knolls of Chiogran, with elevations of more than 150 meters, then crosses a series of smooth hills bearing palm trees and thick-leaved olive trees.

282 km Junction to Tarhuna; on the left, the Fort Italia on the Merghet Hill (elevation 180 meters). Here the Road reaches the sea.

290 km Homs - surrounded by palm and olive trees; drinking water; artesian well (over 1,000 liters per hour), a group of artesian wells (over 1,000 liters per hour), and a group of ordinary wells (over 1,000 liters per hour).

293 km Leaving the ruins of Leptis Magna behind on the left, the Road leads into the Oasis of as Sahel, 17 kilometers long and 3 kilometers wide, covering an area of 2,500 hectares and comprising 140,000 palm trees. At the edge of the palm grove the Road leads across the Wadi Kaam and crosses a steppe where grow groups of trees.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED
CONFIDENTIAL

The Road leads into the Zliten Oasis formed by palm groves and olive tree plantations separated by clearings; there are 200,000 palm trees.

321 km Junction of caravan road to BANI WALID [redacted]; drinking water; a group of wells (1,000 liters per hour).

327 km Zliten - in the heart of the oasis - population 4000; center of oil production; drinking water; a group of wells (more than 1,000 liters per hour)

332 km SUQ ATH-THALATHA [redacted] - drinking water; well (200 liters per hour).

352 km Garibaldi - a village of colonists; drinking water; two artesian wells (1,000 liters and 200 liters per hour respectively; ordinary wells. The quantity of water available totals 960 cubic meters per hour.

381 km Misurata - population 5,000 (34,865 in the entire oasis); water resources of the Misurata. Oasis; 100 small wells.

In the west, two artesian wells (each yielding 500 cubic meters per hour), and the ordinary well of Zaniet-at-Mahdjub (200 liters per hour).

In the east, two artesian wells (200 and 60 cubic meters per hour respectively) and a series of ordinary wells yielding 1000 cubic meters per hour respectively) and a series of ordinary wells yielding 1000 cubic meters per hour.

A motor route 48 kilometers long starts at Misurata, and meets the Coastal Road at marker 423. This branch road connects the three villages of Crispi, Gioda, and Tauroga, products of colonization [redacted]: (a) Crispi- drinking water; ten artesian wells yielding a total of 3,000 cubic meters; (b) Gioda - drinking water; four artesian wells with a total yield of 1,200 cubic meters; (c)

CONFIDENTIAL
RESTRICTED

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

(c) Tauroga - drinking water; artesian wells yielding a total of 300 cubic meters.

The Road crosses a monotonous steppe which is completely level and used as a sheep pasture.

403 km First road supervisor's house (Casa Cantoniera) on the Sirte, surrounded by palm-trees.

412 km BIR JUMA - deep well; abundant water.

423 km Branch of the motor route to Tauroga (10 kilometers).

425 km Second road supervisor's house, well with slightly salty water.

431 km Reinforced concrete bridge across the Wadi Sofeggin with three spans of 19,2 meters; barley fields in the wadi.

The Road makes a detour of 7 kilometers in order to avoid the swampy zone of the Sabkha at Tauroga.

446 km On the right, branch road to Hun.

The Road goes straight as far as the Wadi Gargur; beyond the wadi is a monotonous steppe with few trees.

471 km Bridge across the Wadi JADDAZ.

476 km Third road supervisor's house.

497 km On the right, branch road to the Fezzan.

The Road crosses stony, level terrain bearing bush vegetation.

516 km Road crosses the Wadi ZAMZAM; dam. Good clear water in the vicinity of Bir SHFAF.

527 km Tmid Hassan - road supervisor's house. Well with abundant good water. The Road, flanked on the left by a series of dunes; runs straight over monotonous terrain.

605 km Bir Bu Djarada - last road supervisor's house west of the Sirte

614 km Bir Bu Retma. The Road crosses dunes.

634 km Sirte - population 2,500. Leaving the airfield behind on the right, the Coastal Road leads through flat terrain covered with dunes.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

674 km Road supervisor's house with water supply from well of as Sultan (20 kilometers away). The terrain is rolling and gradually changes into grazing land.

680 km Reinforced concrete bridge across the Wadi Hensua; five 7-meter spans. The Road approaches the series of dunes on the coast.

694 km As Sultan - a small oasis surrounded by dunes; wells and emergency landing field.

The Road leads through an area covered with esparto grass and bushes; on the left is the Sabkha as Sultan Lagoon into which flow the al- Amra and HARAWA Wadis, which are spanned by reinforced concrete bridges.

724 km Road supervisor's house with a large cistern; fresh water from the well of Bir Asela (3 kilometers distant, on the coast). The Road crosses the al- Ahmar River over a concrete bridge with five 7-meter spans.

The road at this point leads over a dam into uneven terrain. Numerous wadis form coastal lagoons and feed a series of fresh-water wells.

760 km Road supervisor's house. Bridge across the Wadi ben Gauad with 25-meter span.

823 km Road supervisor's house.

839 km Arch of Triumph of Philenes, built in 1937. The road continues straight over flat terrain.

877 km Road supervisor's house - restaurant, motor fuel supply. The Road crosses a region of small hills which cut off the lagoon of the farthest section of the Sirte, and skirts the wells of al Bu KIFA and Bu KHUSAYBA.

917 km Agheila - Radio station; emergency landing field; starting point of the road to Kufra;

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

948 km Sidi MUHAMMAD ASH-SHARIF [redacted] The Road leads through rolling terrain with several sabkhas [redacted]. The Hills of Com el Melah are located to the left.

961 km Road supervisor's house - branch road to Brega Melelli (1,100 kilometers); abundant water; grazing land.

1,005 km Maaten Tabilba - wells; drinking water. The Road crosses hilly terrain.

1,023 km Road supervisor's house. The Road proceeds on arid and rocky terrain bearing sparse vegetation.

1,034 km Agedabia (600 inhabitants) is the starting point of the most commonly used road in Kufra; water. The Road crosses a desert steppe and skirts the fortifications of Tilgher, Rorai, and Pessana.

1,062 km Branch road to Zuetina (8 kilometers, abundant good water just below the surface). The Road proceeds along the coastal dunes.

1,091 km ZULAYTAT AL-GHAZAL [redacted]. The road enters a steppe zone.

1,122 km Passing the wells of Gser and Trab.

1,128 km Sidi AHMAD AL- [redacted] Magrun; large Roman well yielding small amounts of drinking water; cistern of HAO AL-FAWARIS [redacted].

1,138 km Intersection; left to Carcura (salt pits), right in the direction of Soluch (motor route).

1,151 km Ghemines - Plentiful, slightly brackish water suitable for drinking, numerous gardens producing melons, dates, table grapes. On the right, motor route branches off to Soluch (22 km).

1,171 km Bu Lghema - 2 kilometers to the right of the Road is a well yielding drinking water.

1,200 km Branch road on the right to the [redacted] el- Guarscia Oasis (3 km).

1,203 km Bengasi. In Bengasi the Road (first asphalted, then gravel, without foundation) branches off to Barce via [redacted] el- ABYAR. It leads through the as Sabri Palm Grove (group of wells) on the left, and the [redacted] AYN AS-SALAMANI Lagoon on the right; then runs

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

through the steppe. Its course is straight up to the al- Coefia Penal Colony (well with brackish water).

1,223 km Sidi Chalifa - road supervisor's house. The road runs on a straight line through a limestone plain which bears comparatively green pastures.

1,239 km Driana - well (brackish water). The Road leads through slightly rolling steppeland.

1,247 km Tanseluch - well. The road skirts the SABKHA AL-KUZ [redacted]

1,248 km Well, -2 kilometers from the Road.

1,255 km AL-MAGNI [redacted] - road supervisor's house; well (brackish water).

1,272 km Tocra - drinking water; motor fuel depot.

Beyond Tocra the Road leaves the coast and begins to climb the first gradient of the Jabal AKHDAR [redacted] over a winding route through the Wadi Bakur Gorge.

1,280 km Gessa (elevation 307 meters). drinking water; Bacur fortifications. The road reaches this point within one gradient.

1,286 km Wall-type bridge across the Um el Amain Wadi

1,287 km Fortifications of Bu Gseir (elevation 374 meters).

1,288 km- Junction of the motor routes to the colonial villages of Baracca and Filzi.

Preliminary terminal of the aqueduct originating at Ain Mar.

1,306 km Barce - water of the Ain Mara aqueduct.

Branch roads to Bengasi via el Abiar and Giovanni

1,315 km Sidi Rahuma - junction of road to Tolemaide (Tolmeta).- drinking water.

Colonial village of Modalenna.

The Road continues in an easterly direction, skirting the rocky hill of al- Auelia (elev 330 meters) on the right and running along the foot of the second gradient of the Jabal

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
RESTRICTED

AKHDAR [redacted]r. It enters a gorge surrounded by the [redacted] 'ULWAT Mbeichia (elev 514 meters) and the [redacted] 'ULWAT Sultana (elev 509 meters). In a gradual ascent it reaches the Bu Graua Plains which extend for over two kilometers.

Colonial village of D'Annunzio.

The Road rises over knolls bearing bramble vegetation to an elevation of 483 meters; then it slopes downward to [redacted] al- Garib.

1,345 km [redacted] al- Garib (elevation 387 meters) - drinking water.
Between [redacted] al Garib and Bir M'Fauaz the Road crosses several small wadis which converge and form the as Sellum Wadi.

The Road enters the valley of the Chehami Wadi which is covered with dense brush-wood including juniper bushes, mastic trees, and rather dense strawberry trees.

1,362 km Bir M'Fauaz (elevation 449 meters)- Crossroads; on the left, road to Gasr el- [redacted] al- ABYAD; on the right, caravan road to Maraua.

1,363 km Gasr Beni Gdem.
The Road enters the valley of the Ech Ghiahriz Wadi which joins other wadis and forms the [redacted] al-KUF Wadi; the valleys, sunken into limestone-like depressions, are wooded.
The Road slopes downward, crosses the [redacted] al-KUF Wadi over a reinforced concrete bridge, then rises gradually through a grove of carobs, strawberry [redacted] TREES and green oaks; it reaches the plateau at the marker 506 in Sidi Abd-al- [redacted] WAHID through a lateral valley.

1,391 km Sidi Abd- [redacted] AL-WAHID, the best geographically located region in Cyrenaica, with numerous springs and plentiful wild vegetation.

1,397 km [redacted] AYN MISA - to the right of the Road is found the colonial village of Luigi Razza, in a depression surrounded by gardens with many water springs; to the left there are quarries which supply building material.

CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

ZAWIYA AL-BAYDA

1,408 km [redacted] and the colonial village of Beda Littorio, (elev 614 meters), located on comparatively fertile terrain.

The Road crosses small meadows and valleys which slope downward from the plateau to the first gradient; then leads through the depression of the SURAT AL-JAMAL [redacted].

1,423 km Junction of road to Cirene.

1,429 km Safsaf - to the right of the Road, cistern of Gas el Beilich with 10,000 cubic meters.

1,434 km Luigi di Savoia, colonial village ; drinking water.

The Road slopes downward towards the east, leading through an area bearing brush-wood.

1,448.5 km ZAWIYAT-TIRT [redacted] - pumping station and water reservoir fed by the Ain Mara-Baracca pipe line.

1,449 km Lamluda - junction with road to Barce via Slonta.

1,461 km Giovanni Berta (El Gubba) (elevation 577 m) -colonial village; water supply plentiful.

1,467 km Well of Siret Bettamet; pumping station and water reservoir (capacity 1,000 cubic meters) fed by pipeline from Ain Mara

1,472 km Junction of road to Ain Mara, where 5 important springs feed the water pipeline which will supply Bengasi (at present it terminates in Baracca); excellent water.

The road rises over a small promontory and reaches the edge of the second gradient of the plateau; then descends to the Got at Manair plain, is 7 km long and a little over 1 km wide from west to east; it is bordered in the north by the edge of the first gradient of the plateau and in the south by the Rfeld Wadi. In the eastern section of the plain grow cypress trees. At its farthest end (Got Djua, elevation 375 m), the road is hewn into rock and underbuilt by supporting walls. It runs down the slope and descends in a winding course toward Derna.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

toward Derna.

1,503 km Derna - (pop. 11,000), in an oasis with palm, pomegranate banana, fig, and orange trees.

1,513 km Fattoria la Grotte - on the right branches off the motor road to el Mechili.

The road bypasses the Derna airport which is located to the left.

1,529 km Branch road on the right to Martuba (3 km, distant springs, with a pumping station for the water pipeline from Bu Mansur, and a radio station).

1,531 km Masonry bridge over the Martuba Wadi.

1,555 km [redacted] ZAWIYAT UM RZAM - springs, pumping station for the Derna-Tobruk water pipeline, radio station.

1,560 km Junction of road to [redacted] al-BUMBH, 10 km distant.

1,560 km Ain at Tmimi - springs .

1,583 km Branch road on the right to El Mechili.

The road crosses the Gsebelat Wadi which flows into a narrow bay on the Gulf of Bomba.

1,619 km Branch road on the left to [redacted] AYN AL-GHAZALAH (5 km distant with potable water).

1,647 km Branch road on the right to Acroma.

The road runs through monotonous terrain with sparse vegetation to be found only around the numerous nomad camps.

1,678 km Tobruk - no potable water; until completion of the water pipeline from Bu Mansur three tank ships will bring water from Taranto (Italy).

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

1,739 km Branch road on the left to Sidi Mammut, on the right to the al- [redacted] Adem airport (entirely asphalted) and to Giarabub (motor road). The road runs close to the seacoast.

1,789 km The road passes the Bardia airport, on its left and the former caravan road to Amseat which branches off to the right.

1,795 km Road guard station - junction of the asphalted road to Bardia (4 km distant with potable water and a radio station).

Reinforced concrete bridge over the [redacted] JARFAN and [redacted] GARIDIYA wadis.

1,800 km The branch road to Bardia, which runs along the coast, rejoins the Coastal Road (Litoranea).

1,817 km Ridotta Capuzzo (Amseat)- potable water

1,819 km Egyptian border

1,836 km Sollum (Egypt) - potable water.

2. Tripoli - Gadames Road

(a) The road across the Jabal Nefusa

Asphalt road from Tripoli to ~~Ar-~~ RUMIYA [redacted], gravel road without foundation from [redacted] ar- RUMIYA to Gadames. It usually takes 4 to 5 days to cover this 669 km road.

0 km Tripoli -

The road runs at first parallel to the railroad line. It crosses a dune region bearing Australian acacias and poplars. Young eucalyptus and cypress trees have been planted in the various land concessions along the road.

21 km Suani BIN [redacted] Adem - potable water; spring (200 liters per hour) and well (1,000 liters per hour).

42 km Limestone hill of al- AZIZIYYAH [redacted], on the Jafara plateau.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

This is a large colonization center of the Jafara and an important road junction. The road to Nalut, which runs along the foot of the plateau, branches off here. The population includes 25,000 natives and 446 Italians. Potable water: well (1,000 liters per hour).

Beyond al-Aziziyyah [redacted] the road rises. On the land concessions jujube trees appear in increasing numbers.

53 km Bir Layla [redacted] - Well of the Saints, 65 m deep, supplies plenty of good water.

55 km The road crosses the al- [redacted] Hira Wadi. The area is covered with alluvial gravel; vegetation thins out.

The road leads into the Aura depression, which is bordered by two spurs of the Jabal, and reaches the high plateau of the Jabal at an elevation of 250 meters above sea level.

72 km Bu Ghaylan [redacted] (elevation 361 m), potable water; springs (1,000 liters per hour). The forest has been replenished with pine, pistachio, cypress, and locust trees.

The road ascends then to the first gradient of the Jabal, 190 meters above the depression. Between Bu Gheilan and Garian the road is dangerous to traffic in many places.

Vegetation begins just before the slope and includes predominantly olive trees, though also fig trees, grapevines, almond, and pomegranate trees.

The road leads past the volcanic peak of the Caf Tecut (elevation 724 m).

82 km The road descends slowly to the basin of the Guasem Wadi and from there approaches the second gradient of the plateau. Slightly below the road lies the spring of Caf Tobi which yields good water.

88 km Garian, located on the plateau amidst olive and fig tree plantations and cornfields, which appear less frequently

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

toward the south. Part of the population dwells in caves. Southwest of Garian the spring of the Ruma Wadi (good water).

97 km Bu Zayyan [redacted] - potable water; well (200 liters per hour) and small cistern. Junction of the road to the Fezzan. The road crosses undulating terrain where tree vegetation is dense toward the edge of the plateau and several sources of wadis which descend toward the Gran Sirte.

100 km The road crosses the plateaus of Djanduba and Asaba where mugwort, esparto grass and thyme grow.

The road enters the depression of the upper Rumia Wadi. There are small water courses in the wadi throughout the year, which are connected with the groundwater level feeding the spring of the Rumia. The reservoirs and water pipeline of the Jafran are located in the vicinity.

152 km ar-Rumiya [redacted] - junction of the road to the important city of Jafran (10 km distant; (elevation 680 meters; population 7,700 natives); power plant and oil mills.

The road bypasses the upper ar-Rumiya [redacted] Wadi and leads into the steppe.

162 km Uwayniya [redacted] - a group of wells and small springs with considerable hourly yield.

170 km Junction of the road to Ar-Riaina (6 km distant) in the midst of an olive grove. Ar-Riaina is located on the upper edge of a slope. Below the village there is a spring with good and sufficient water (1,000 liters per hour), a well (1,000 liter per hour), and a group of cisterns.

The road runs through a steppe where esparto grass is prevalent and enters the olive grove of Az-Zintan.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED
CONFIDENTIAL

183 km Junction of the road from As-Zintan (3 km distant) well. In As-Zintan a spring of potable water yields 200 liters per hour.

The road crosses the undulating terrain of the steppe, where clusters of esparto grass grow, and bypasses the upper As-Rodjeban Wadi.

To the right of the road is a cistern

212 km Junction of the road from Taredia (12 km) where are located a group of springs (200 liters per hour) and a well (200 liters an hour.)

214 km Junction of the road from Giado (1 km distant) Giado (elevation 659 m) has a population of 1,150;;well (1,000 liters per hour); spring in Zarga. Olive and fig tree, and grapevine cultivation.

218 km Beyond the Oasis of Giado the road follows a straight course through the steppe. It reaches the As Zarga Wadi and crosses the desert-like region of Ar-Rahibat.

227 km Junction of road to el Cherba (16 km distant)

235 km To the left of the road is Bilhabal the auxiliary airfield.

245 km As Sider Wadi, which is overgrown with jujube shrubs.

251 km Umm [redacted] Grab - spring (1,000 liter per hour) and well (200 liter per hour). At left the caravan road from Sinauen.

278 km Junction of road to Bghighila (16 km distant) via Merghes.

300 km Junction of road to Cabao (10 km distant).

306 km. The road crosses the Cabao-Sinauen caravan road. Shortly before the crossing on the right Bu Rebaine appears; well (200 liters per hour) and reservoir.

345 km Junction of the caravan road to Sinauen; well (200 liters per hour).

357 km Nalut- (elevation 600 m), - located in a deep, erosion-formed valley; from afar it appears as a conglomeration of rocks. Part of the population of 4,000 dwell in caves.

CONFIDENTIAL
RESTRICTED

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED
CONFIDENTIAL

Availability of water: cistern (capacity 500 cubic meters); springs, most notable of those of [redacted] Taghliss (720 liters per hour) and [redacted] Tala (180 liters per hour); two wells in the vicinity contribute to the water supply of Nalut.

The springs are located where the yellow, gypsum-like marls meet the limestone terrain of Nalut; 15 to 20 meters below this water level there is a second series of springs, probably fed by the first one (spring of [redacted] Ethel) and corresponding to the tufaceous limestone stratum.

Auxiliary airfield at the other end of Nalut.

369 km Gubia - well (200 liters per hour).

The region assumes an increasingly steppe-like character (desert broom, German broom). The road crosses the Cerciuf Wadi.

473 km Sinauen(elevation 490 meters - two small settlement located at the end of a [redacted]. Potable water; well (1,000 liters per hour). Brackish water; springs (200 liters per hour), well (100 liters per hour).

The water is distrubuted through canals.

488 km Well (200 liters per hour).

518 km Chaamet an Neza; well.

530 km Bir Tifist well (1,000 liters per hour); water slightly brackish, otherwise good. The road descends to a plateau located between the slope of the Hamada and that of the Tenarut Wadi.

572 km Tgutta- (elevation 550 meters. radio station; meteorological station. The oasis lies in an extensive depression where malaria occurs.

575 km - Derg- palm grove in the center of the Ghibla; potable water; well (1,000 liters per hour), two wells (200 liters per hour

RESTRICTED
CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED
CONFIDENTIAL

each); group of springs (200 liters per hour).

The road turns westward and enters the dune area of al-Bab, an extension of the Southern-Tunisian Erg.

The road crosses the Aual Wadi and then a high plateau from where the Gadames Oasis can be seen.

585 km Matres - well (200 liters per hour).

603 km Eograr - well (200 liters of brackish water per hour).

611 km Bir Rahil - well (200 liters per hour).

669 km Gadames (elevation 760 meters)- irregularly built town with paved streets.

The oasis covers 75 hectares, the southern third of which is only sparsely cultivated due to lack of water. A reservoir was under construction in 1938 to remedy this situation. Irrigation is provided by the following:

(1) the "mare spring" (Ayn al-Fras), an old artesian well which is fed from a very deep groundwater level. The brackish but potable water is gathered in a square basin which is enclosed by a wall and a row of trees (30 m long, 20 m wide, 1 to 6 m deep). From here emanate three irrigation canals.

(2) two natural springs (Tala); their water is distributed through small canals and pumps.

(3) an artesian well which was drilled in 1932 on the edge of the oasis. It yields 120 cubic meters of water per hour, makes possible the irrigation of 20 hectares. The water is allotted to the natives, who grow barley and palm trees with the obligation to plant a certain number of palm trees annually.

(b) The road along the foot of the Jabal Nafusa. This road leads

RESTRICTED CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

along the foot of the Jabal and partially replaces the road above described, shortening it by 77 km. It is asphalted up to Bir al-GHNAM [redacted]. Between Bir al-GHNAM [redacted] and Nalut, the asphalting was started in 1939.

0 km al-AZIZIYYAH [redacted] - After crossing the railroad line, the road, flanked by land concessions, runs straight southwestward. It rises gradually to small, rocky hills (foothills of the Jabal), and reaches Bir SULAYMAN [redacted], a deep well, which gives good water in sufficient quantity.

The road continues through undulating terrain bearing steppe vegetation.

30 km Bir Mdachem - well drilled into the rock; sufficient good water (200 liter per hour).

The road leads through the plain of Gattis, which, with its wheat and barley plantations, is the richest region of the colony. Bir ech Koheb - well on right of road yielding sufficient but brackish water.

49 km Bir al-GHNAM [redacted] (elevation 178 meters-) Two wells with brackish but potable water, one of which yields 1,000 liters per hour.

The road crosses a hill range adjoining the Jabal; then continues for a distance of 6 or 7 km along the foot of the Jabal [redacted] through an area with saline soil and rich vegetation.

102 km Gasr el Hag- potable water; springs (200 liter per hour) close to the edge of a wadi; well (200 liter per hour).

The road continues along the foot of the Jabal, which here is cut by a number of deep valleys. The road crosses these valleys which during the rainy season are filled with stagnant water.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

122 km Junction of the road to Giabo (11 km distant).

135 km Scesciuch - potable water; group of springs (200 liters per hour). The oasis of al-Masida with a lignite deposit is located several hundred meters to the east.

For a distance of 24 km the road runs along the foot of the Jabal through stony terrain with many small springs which owe their existence to inundations caused by the winter rains.

150 km AYN al-GHAZAL - spring (200 liters per hour).

The road crosses the depression of the Djaddu Wadi, easily the largest wadi in the area.

158 km AYN SLIA - spring (200 liter per hour); important caravan center.

162 km Junction of the road from Zuara.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

168 km — al- [redacted] Glose - spring with potable water, which becomes swampy, particularly in winter. One of the springs yields 2,000 liters per hour and is equipped with regulating devices.

The road follows the steep slope of the Jabal.

198 km — Tigi - water (slightly sulphuric); a group of wells (1,000 liters per hour); spring (4,000 liters per hour).

Bir al- [redacted] Aghila - potable water: a group of wells (3,000 liters per hour). The road winds its way over a steep slope to Nalut.

238 km — Nalut - 357 km marker on the Tripoli-Gadames road.

3. North-South Tripoli-Murzuch-Tumo road linked with (3a) Branch road to Barnui (Tibesti)

The road branches out from the Tripoli-Gadames road which leading across the plateau, at Bu Ziyan [redacted] (97 km marker). From Bu Ziyan [redacted] to Mizda it has an artificial rolled non-asphalted foundation. From Mizda to Murzuch the road is good and rests on natural foundation: from there on it becomes a good dirt road

0 km — Tripoli

97 km — Bu Ziyan [redacted]

The road descends toward the wadis which originate in the Jabal. Vegetation thins out gradually. The terrain is undulating, covered with brush and single trees, and is reminiscent of the Jafara. Farther south it is semi-desert.

145 km — Ash- [redacted] Cheguig - water (not potable); well (200 liters per hour).

180 km — Mizda (elevation 522 meters) - potable water: a group of wells yielding 1,000 liters per hour. The water becomes brackish when used frequently and seems to diminish as a result of heavy demand (garrison). Windmill available to pump water. In 1937, attempts were made to drill an

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

artesian well; penetrated the crystalline limestone and greenish chalk layers down to 275 meters without striking groundwater. The oasis has about 200 palms, but this number is gradually decreasing; there are no young palm trees. The steppe bears little vegetation. It is dotted with pistachio plants which survive despite great damage caused by nomads and caravans.

340 km al-GHIRYA ash-Sharghya [redacted] (elevation 687 meters) - main settlement of the Ghibla. Fort Baccon, located on a mountainledge, towers above it. The native village consists of clay huts covered with tent cloth and palm leaves.

The oasis has malaria contaminated springs and five wells which yield brackish water.

The salinity of the soil limits planting to palm trees (1,000), wheat, barley, and some vegetables. Sanitation work at the oasis has been started.

The road passes an auxiliary airfield on its right and crosses an undulating, sometimes rocky area devoid of any vegetation.

380 km Bir Bu Ghila - Amidst steppe-like pastures: potable water; well 40 meters deep.

437 km ash-Sharghya [redacted] - water (brackish) used by the natives and by cattle. Potable water comes from al-GHIRYA ash-Sharghya [redacted]. Fuel dump, auxiliary airfield, radio station.

The road turns south and crosses the narrow vegetated valley of a branch wadi of the Ghilan Wadi (elevation 265 meters).

564 km Bir al-GHILANIYYA [redacted] (elevation 430 meters) - water (brackish); well 47 meters deep.

786 km Brach (elevation 265 meters) - population 730; wells lacking here, but abound in the entire area of the Ash-Shiyati Wadi. Very important springs (AYN KABIRAH, AYN-[redacted], [redacted]-Saghirah, AYN [redacted] al-Rumm) flow into basins and are used for irrigation through a

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

system of canals. The oasis has 17,000 palm trees and 220 gardens with various plantations. Cattle are scarce. There is a fuel dump.

A gravel road running westward from Brach connects the oases on the right of the Ash-Shiyati Wadi up to Edri. These oases have abundant water.

The road to Sebha bypasses the Ramlah Zallaf sandfield. The road runs in the Ash-Shiyati Wadi at the foot of the radient of the Ash-[redacted] Jabal.

879 km Junction with road from Misurate (see below).

The road crosses drifting dunes of the Ramla as Seguira. Rather steep descent to the Cheir Wadi (somewhat difficult for automobiles).

911 km Umm al-[redacted] Abid - Abundant and excellent water; well 370 meters distant. Fuel dump, auxiliary airfield, radio station.

The road turns southwestward through stony terrain. Beyond Semnu drifting dunes hinder automobile traffic.

1005 km Sebha (elevation about 400 meters) - important center of the Fezzan; radio station, wells and windmills.

On a rocky hill along the road lies Fort Elena: also an airfield.

Seven km north-northwest lies the large Al-Gedid oasis which includes three groups of palm groves, the largest of which has 18,000 palm trees and more than 100 gardens (well yielding sufficient water).

There are salt marshes to the right of the road, rocky desert with low brush to the left. Then follows the terraced edge of the Sarir al-Gattusa. The road crosses a small wadi and later runs through rocky desert.

1067 km Bir el Feghar - a well at the beginning of the oasis of Goddua.

1074 km Goddua - several fresh water wells.

The road runs in the Wadi an Nesciua.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

1113 km The road crosses barren and desolate terrain.

1147 km Murzuch (elevation 391 meters) - entirely surrounded by the dunes of the Murzuch sand desert.

Airfield and radio station.

East of Murzuch the dirt road to Zuila presents difficulties to traffic in several dune zones. Then it continues for 125 km through a hamada interspersed with sandy strips.

1200 km Traghen (elevation 394 meters) - potable water; 130 wells and six springs.

The oasis has 60,000 palms and gardens.

1236 km Umm al-Araneb - potable water; 36 wells: 10,000 palm trees.

1254 km Branch road to Zuila (24 km distant), which has about 100 wells yielding brackish water and 8m000 palm trees.

The sand makes it difficult to reach Al-Gatrun.

1378 km Al-Gatrun - in the center of the Wadi Hekma with 105 wells.

1457 km Tegerhi (elevation 500 meters) - 20 wells located in a depression at the edge of the Ramla Tegerhi. In the west and south it is menaced by drifting dunes.

Beyond Tegerhi the valley of the Wadi Hekma blends into the dunes. The dirt road turns eastward and enters a rocky desert.

1518 km Al Uigh al-Chebir - located in an extensive depression in which pasture land with dwarf palms and brush are widespread. There are several wells yielding fresh water throughout the year. The road runs over undulating and solid terrain through a valley with steep walls (automobiles can proceed only at moderate speed). The dirt road becomes better after crossing the Tropic of Cancer. It is flanked by about ten parallel footpaths. The road crosses the Wadi al Agaba in a gravel desert.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The plateau-like heights of Tummo can be seen on the horizon. The dirt road leads windingly into a ravine (Chermet Tummo) and follows the bottom of the wadi, which is buried under masses of rock and is surmounted by the steep slope of a large high plateau.

1717 km Bir al-Uar or Tummo - important watering point on the road to the Chad (French Equatorial Africa): five small wells which are located in a small grotto and can be used only with difficulty due to the narrow entrance which leads obliquely into the rock. Their total capacity is only 15 cubic meters. The dirt road proceeds southward along the old caravan road via Bilma to the Chad.

a) Branch road to Bardai (Tibesti).

Caravan road 1,000 km long.

0 km Murzuch (elevation 395 meters)

372 km Al Uigh al-Cheoir - well. From here the road turns southeastward directly into the desert.

620 km Aui - well.

687 km The road crosses the Wadi Arrachie.

712 km Uolossena (elevation 800 meters) - a valley depression in the northern Tibesti, opening to the north: several wadis join here coming from the northern slope of the Tibesti; well.

The caravan road continues in the Wadi Bardaghe.

882 km Guesso - the caravan road enters the valley of Zummeri.

1000 km Bardai (elevation 980 meters)

4. The North-South Misurata-Hun-Sebha link with (4a) Branch road to Jebbi Bu (Tibesti).

The first 116 kilometers follow the coastal road; important traffic artery between the Mediterranean, the oases of the Giofra, and the center of the Fezzan. Level terrain up to Bu Ngem, rough up to Hun, and gravelly desert in the Jabal as-SAWDA

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

0 km — Misurata - From Misurata to km 116 marker of, Coastal Road (Litoranea).

65 km — Branch road to Tauorga.

116 km — The road branches off the Coastal Road and crosses a level and rocky terrain with brush vegetation.

128 km — El Gheddahia - water mediocre; 20 meters deep well. Radio station.

The road crosses the Zemzem Wadi and other wadis of the steppe which precedes the desert.

230 km — Bu Ngem (Elevation 125 meters) - this oasis has only 150 palms and about twenty wells 5 to 100 meters deep, only three of which yield clear water. The water of the other wells contains a rather high percentage of magnesia. Fort Demandato; fuel dump; airfield; radio station.

Bu Ngem is surrounded by dunes. The road bypasses them by following the wadi which, up to Bir el Fatima, is surrounded by small sandy hills. Sufficient potable water yielded by wells 24 meters deep. A halite mine is located to the north.

The road crosses a small chain of dunes.

298 km — Bir Bu Atla - in a depression which includes eight wells six meters deep which yield sufficient but brackish water.

387 km — Bir al- Tar (elevation 220 meters)

423 km — Hun (elevation 207 meters) - radio station; center of the Giofra. Junction of the road to Zella (196 km distant). Only Brackish water available. Fresh water is brought into the village from a well about 5 km distant.

440 km — Socna (elevation 249 meters) - 18,000 palms; fresh water from the same well which supplies Hun.

458 km — On the Bir al- Uasca road are located large concrete tanks containing potable water.

473 km — Bir al- Gteifa (elevation 396 meters) - well supplies ample potable water; old fort nearby.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The road runs through undulating terrain; then it ascends to an elevation of 585 meters and reaches the high plateau of the Dahra Mummen (basaltic hammada) which is crossed by wadis. Above it towers the Garet Kala (elevation 803 meters), summit of the Jabal as Soda.

The road descends into a valley, at the exit of which the basaltic area ends and a level, slightly sloping gravelly desert [redacted]

548 km Bir al- Gas (elevation 506 meters) - junction of the road to Tibesti in the direction of Jebbi Bu; water; fuel dump; auxiliary airfield.

The road turns southwestward and reaches the [redacted] gravelly desert, which later becomes sandy and is know as Ramla al- Chebira.

612 km Branch road to Brach (93 km distant). Cf. road Tripoli-Sebha-Tummo from km marker 786 to km marker 879.

For the branch road from Brach to Sebha cf. road Tripoli-Sebha-Tummo road from km marker 879 to km marker 1005.

738 km Sebha

a) Branch road to Jebbi Bu (Tibesti)

The most direct road approaching Tibesti branches off the Misurata-Sebha road near Bir el Gaf (548 km).

From Bir al- Gaf to Jebbi Bu (French Tibesti): 920 km.

This is a dirt road up to Uau el Chebir (350 km).

The route becomes a caravan trail from Uau el Chebir to Bir Birki at the foot of the Tibesti. No accurrate information is available on the road from Bir Birki to Jebbi Bu.

According to a communication of Colonel Tilho of 28 January 1935 the road leading into the desert goes through the Wadi Jebbighe via Jebbi Suma, Jebbi Bu, and the Mohi pass.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

0 km Bir al- Gaf - the road crosses the eastern edge of the gravelly desert of (Serie) Al-Gattusa, which is dominated in the east by the slope of the Dor el Gand plateau.

231 km Tmessa - oasis; well yielding drinking water.

350 km Uau al- Chebir (elevation 415 meters) - located in a basin: drinking water; 1,900 palm trees.

The road, now a mere caravan path, crosses the vast plain of the Serir north of Tibesti which is 200 km wide and totally lacks water. Approximately 100 km south of Uaua al- Chebir (elevation 524 meters) at the junction of a path and the main road begins a caravan track which leads in a south-southeasterly direction.

570 km As Sarfaya - water

630 km Bir Uoigh - well

690 km Acheibesc - water

720 km Bir Birki - well

The road leads through the Jebbighe valley.

900 km Jebbi Suma - controls the way to Tschad by means of the narrow pass of Mohi and the Misch Valley.

920 km Jebbi Bu (elevation 1360 meters) - is a dead-end trail leading through the narrow pass of Mohi to the Misch Valley. (Both Jebbi Bu and the pass of Mohi are in French territory).

5. Additional roads and trails in Tripolitania and in Fezzan.

a) In Tripolitania (Zuara el Giosc; Tripoli-Tarhuna-Homs; Tarhuna-Beni Ulid-Mizda: Misurata-Beni WALID)

Zuara-al- Giosc

This road connects Zuara with the road at the foot of the plateau which leads to Nahut and Gadames. It has a rolled non-asphalt surface with the exception of a 12 km stretch of road to the north of Al- Uotia where there is only a dirt road.

0 km Zuara - the road runs in a straight line toward the southwest, crossing a series of small oases. Then it comes to hilly terrain.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

5 km Sidi Abd-as-Samad - well (more than 1,000 liters per hour)

9 km [redacted] al-MINSHIYYA - oasis: well with drinking water, branches off from Al [redacted] JAMIL; where there are four wells, each of which furnishes [redacted] 1,000 liters per hour; then it crosses desert land.

20 km Bir [redacted] al-AZYAR - water not potable.

22 km Bir [redacted] al-AJRABIYYA - water (average quality); a group of wells (3,000 liters per hour)

The road runs in a straight line through undulating pastureland and then through slightly sandy country, which is passable.

31 km Al Debdaba

37 km Bir Zerir - potable water; 2 wells (each 1,000 liters per hour)

It crosses the Sebkha Ghedir el Hauasi, then dunes covered with shrubs.

63 km Al Uotia - drinking water; well (200 liters per hour)

79 km Al Hebilla - well with brackish but potable water; a well with drinking water at some distance to the right (1,000 liters per hour)

91 km Gsur Djuddu

97 km Bir [redacted] al Hamra - drinking water (light magnesium content); a group of wells (2,000 liters per hour)

118 km Branches off toward S[redacted]ghaf Auch via Bir Ebla; well with potable water.

124 km The road runs into the [redacted] AL-AZIZIYYAH-Nalut road at km marker 162.

130 km Al Giosc

Tripoli-Tarhuna-Homs; asphalt road

0 km Tripoli

The road leaves Tripoli through Porta Benito and bears to the right of the road leading to Tagiura via Fornaci. It is lined on both sides with eucalyptus trees and castor-oil plants. Then it goes through dunes where Australian locusts grow. It crosses the shallow Wadi Megenin, which is covered with dunes.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

23 km Castel Benito - airport. Branches off toward Suani ben Adem connecting with the Tripoli-Garian-Nalut road. Potable water: wells and springs (total 1,000 liters per hour). The road leads through flat terrain with irrigated land concessions.

32 km [redacted] Fundug Ash-Sharif - drinking water; well (200 liters per hour).

33 km Sugh as Sebh (elevation 104 meters) - large estate; bridge over the Wadi Majanin [redacted] at its deepest point. Desert land in background. The road leads into the gorge of Wadi Milga, which cuts through the front of the plateau of the Tarhuna. Then it crosses the Wadi al-Cherua over a bridge.

60 km Branch road toward Al-Aziziyah [redacted]. Shortly before the mountain to the left of the road is a well with potable water (200 liters per hour). The road then leads into a broad valley and begins to climb. It crosses the Wadi Milga. The valley narrows and assumes desert-like characteristics. The road flanked the wadi and its tributaries by locust trees crosses several times. On the right are three shallow wells, built by the Ancient Romans.

Beyond Sug al-Khamis [redacted] the road crosses a slightly undulating high plateau covered with drifting dunes; then crosses the wadi for the 1st time. There is a spring on the left.

A group of wells at Abia Meggi; drinking water (200 liters per hour). The road goes into a depression after crossing a rocky area.

89 km Tarhuna (elevation 398 meters) - located in a fertile but treeless depression; radio station: airfield; potable water; springs (360 cubic meters per hour).

The road runs through hilly terrain marked by a group of olive trees, then turns southeastward. The land is characterized by broom vegetation and especially by esparto grass. The road then crosses the Baragha, Menchi, and

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Al Fordjan Wadis. Finally it descends into the Wadi Dann, which contains numerous old weirs. South of the road near Mudiria there is a welll with drinking water.

112 km Breviglieri - colonial village; well.

121 km Marconi - colonial village; spring with drinking water (60 cubic meters per hour). The road crosses the Wadi Gsea, passing the ridge located between the Ras el Meid and Ras Ahmed hills, and leads into a depression with esparto grass and gardens in which grow olive and pomegranate trees. Then the road again climbs over another ridge.

135 km Al-Gusbal - located in a rich basin with olive tree ochards; drinking water: well (200 liters per hour)

160 km Homs

Tarhuna - Beni Ulid - Mizda

158 km Rolled non-asphalted road up to Uesctala, from there to Beni Ulid gravel covered road without sub[redacted], and from [redacted] BANI WALID to the Mizda, dirt road.

0 km Tarhuna - [redacted] beyond the depression of Tarhuna the road runs over a hilly terrain, then through another fertile depression, uniterrupted desertland, where attempts have been made toward forestation. After running in a straight line over a long distance, the road leads into the plain of Tenzina.

18 km Gasr Tenzina - the road crosses undulating terrain characterized by a group of jujube trees.

38 km Uesctala - well

In the background large pistachio trees line the road. There are also remnants of forests which break the monotony of the terrain. Then the road leads through a rocky and completely barren high plateau.

The road descends to the beginning of the Wadi Dinar which flows into the Wadi [redacted] BANI WALID. The valley has a rock bottom with no vegetation, except for a few jujube trees.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The Wadi which at first is broad and shallow soon narrows and deepens. It then passes the foot of a small mound which holds the ruins of Gasr Dawani. The valley is enclosed by steep slopes, which are formed by horizontal layers of limestones.

The road leaves this valley and climbs onto the plateau; then it descends into the rocky valley of the Wadi Migrawa, which is another tributary of the Bani Walid. It then climbs onto the plateau again, before descending into the deep gorge of the Wadi Bani Walid, [redacted]

91 km Bani Walid - beautiful oasis with olive trees; 20 km long; located in a canyon. It owes its existence to the water stored by the damming of the wadi. There are 15 wells, 14,000 olive trees, 3,700 palm trees, and 1,300 fig trees. Branch of the dirt road from Misurata. During the rainy season a lake forms after abundant rainfall, which remains in the wadi until Spring.

The road proceeds to Scemach. It follows a level plateau which is strewn with limestones and trachyte fragments, but has no vegetation. It then descends into the valley of the Wadi Sofeggin.

136 km Scemach - two wells, one 60 meters deep, with abundant drinking water. Scemach-Mizda road, which has been under construction for two years.

158 km Mizda

Misurata - Bani Walid

132 km of rather good dirt road.

0 km Misurata - coastal road (Litoranea) to 6.5 km marker.

6.5 km The dirt road leads into rocky terrain toward southwest and rises to the limestone slopes of the plateau known as the Ras-al-Adan. Desert-type vegetation.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The road then leads into a depression which is planted with barley. It passes the Bir Falladja, an old well with abundant water, which lies in a small depression [redacted] covered with underbrush.

The road climbs a second plateau and then descends into a broad flat area.

22 km Bir Gatariana - old well 32 meters deep.

The road leads over a rocky desert area.

31 km Bir al-Gardabia - well 40 meters deep

The road crosses the Umm-al-Tarfan and Meruhar wadis which bear [redacted] with acacia and broom vegetation, then the Berumil and Tahala Wadis (barley fields)

56 km Gasr Bu Charian - the road crosses the Durghis Wadi (barley fields), then the beginning of the small Chetib al-Bir Wadi.

66 km Northwest of Bir Dufan, the dirt road branches off toward Zliten. Bir Dufan - well 68 meters; abundant water, average quality; wildlife reservation.

The road proceeds westward over the depression of the Wadi Mimun.

89 km Gasr Mimun - the dirt road runs southwestward, crosses rocky undulating terrain which is covered with sparse brush. It crosses the Wadi Mansur which hardly cuts into the surface of the plateau. Cistern at Faschiet-el-al-jamamla; crosses the Wadi Tmesla and runs into the galley of a short tributary of the Wadi Merdum.

112 km Gasr al-Habs - crosses the Wadi Merdum along the right bank of which the road leads to the mouth of the Wadi Kerchenna, which it follows up to its source.

131 km Auxiliary airfield

132 km BANI WALID ~~[redacted]~~

b) In Fezzan-Hun-Zella

The road runs over flat terrain for 196 kilometers.

0 km Hun

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

17 km Uaddan (elevation 247 meters) - population 15,000; located in a basin surrounded by dunes, extending 15 km from northwest to southeast. The oasis has 30,000 palm trees.

40 km Tescena- well

118 km Aghcib

The road crosses a series of wadies running northward

196 km Zella- (313vation 195 meters- population 2,500; radio station.

Zella comprises a group of several small fertile oases where ample drinking water is available.

Sebha-Ghat

Gravel road without substructure. In two places, 20 km east of Serdeles, there is danger of sand blocking the road and causing inexperienced drivers considerable difficulties. This is an oasis road which ends in the Wadi el Agial

0 km Sebha

59 km Junction of road to AL-ABYAD

79 km Chief - 5000 palm trees; 22 gardens

96 km Gasr Bendbeia - 6100 palm trees ; 29 gardens

128 km el-Gheraia - 3000 palm trees

139 km Al-Fgeg - 15 wells with brackish water; 110 palm trees.

142 km Techartiba - 20 wells; abundant fresh water; 900 palm trees; 17 gardens.

146 km Al-Graga - 23 wells; fresh water; 5,500 palm trees.

160 km Brech - 35 wells

162 km Tuach - 26 wells; 1,300 palm trees

166 km Germa - 16 wells

172 km Al-Grefa - 10,000 palm trees

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

179 km Al-Hatia

197 km Ubari (elevation 425 meters)- 50 wells, several of which yield good water; Airfield radio station; fuel dump.

The road leads to the foot of the Hamada, which is situated more than 200 meters above the valley of the Wadi Irawan.

216 km Bir Manuer - water abundant and good.

223 km Bir as-Sermachi - water good.

228 km Tin Abunda- water abundant and good. Here are the last watering places before Serdeles which is 232 km farther. Beyond Tin Abunda the road climbs to a height of 640 meters above the Wadi Irawan, then leads through the Arir, and crosses three drifting dunes.

460 km Serdeles (elevation 550 meters - auxiliary airfield; fuel dump. The Ain al-Chebira spring has excellent and abundant water in the court-yard of a small fort. In the depression there are 49 springs yielding good water. Beyond Serdeles the road crosses the northern part of the Tadrart mountain chain, and descends swiftly into the Wadi Tanezzuft.

584 km Gat- 20 wells; 22 springs all of which flow during the entire year; airfield; radio station; a fuel dump. Tin Alcum is situated 54 km south of Gat with 15 springs, 2 wells, 3,600 palm trees, and 50 gardens.

6. Road and trail connections to Kufra

a) Al-Agheila - Kufra

Gravel road without substructure as far as Marada; from there on trail to Kufra. Terrain changes little, affords good visibility for motorists.

0 km Al-Agheila

33 km Maaten Giofer - brackish water.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The road turns toward the rocks of Guerat as-Shia.

121 km Marada- lies in a large depression with a semicircle of rocks around it.

The oasis has plenty of water and wells.

Beyond Marada, the trail leads southeastward on flat terrain, then cross a dune area known as Ramlet Zelten.

231 km Water of mediocre quality.

The road turns directly southeastward

641 km Ain al-Giulalat: center of the Tazerbo; cluster of oases consisting of three small oases surrounded by sandy strips containing many springs.

There is a number of palm groves with 45,000 palm trees.

Sand strips and salty swamps extend between the various oases.

Main group: Ain al-Giulalat, and Ain at-Talab, al-JAZIRAH, BU MAYH, [redacted], [redacted], Maabus Yusef, and Maabus Hueg, located to the southeast; Aina al-Gedeied, Hagar al-Bahri, Hagar al-Auin, and Maabus Ghesh-Ghesh located to the northeast. Ain al Gsebaia is isolated in the northeast; Ad-Dahua, Ad-Deheum, and Abd-al-Tungi are isolated places in the southwest. The greatest distance between palm groves is 47 km. Their elevation is between 165 and 200 meters.

888 km Rebiana. (elevation 391 meters)- a series of palm groves, extending over a distance of 9 km from north to south, located to the North of a salty lagoon 4 km long. Water is available.

The road descends along the southern slopes of the Jabal Di Rebiana, then crosses a series of dunes located at a 90 degree angle to the road. After crossing the dunes, the road crosses a flat area between the Jabal Muss on the right and the Jabal al-Nari on the left.

998 km At-Tag (Kufra) (Photograph No 91).

b) Bengasi - Kufra

1094 km of road, partially gravel without substructure, partially trail.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Between Gaar al-Sahabi and Kufra the road, although built on natural ground, permits a good driver to travel at fairly high speeds.

0 km Bengasi

160 km The road crosses slightly rolling terrain and sparse, low shrub forest. Then the terrain gradually becomes rocky and turns into semi-desert.

Wadi al-Farag is reached, where the water level is covered by a layer of sand 1 meter thick. There are several wells.

213 km The road reaches al-Haseiat, then turns southeastward through rolling terrain.

263 km Maaten-ar-Risam; well with brackish water.

272 km Base of Gaar-as-Sahabi; gasoline station. Beyond this point the road crosses a desert-like zone.

358 km Maaten as-Sabil- well fed by the ground water table of Augila.

Sandy terrain at the entrance to the oasis; danger of bogging down.

370 km Augila- (elevation 35 meters)- the oasis is surrounded by a palm grove, which in turn is surrounded by a belt of shrubbery. Many wells with slightly brackish water.

The trail turns southeastward.

415 km Gialo (Photograph Nos 87-89).

420 km Al-Ergh- extensive oasis surrounded by a shrubbery zone and containing about 53,000 palms. The water is brackish in varying degrees. The water of the well of Bettafal, 45 km to the southeast, however, is excellent.

Beyond this point, the trail leads into a flat rock desert with solid surface, where automobiles can travel at a fairly high rate of speed. This zone stretches 400 km to the arid and sandy zone extending northward from the Wadi Zighen.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

620 km Gasoline station.

855 km Bir Bu-Etla.

875 km Bir al-Harach has most important well in the Wadi Zighen; also five main wells at Bir al-Harasi, Bir Bu Etla, Bir al-Atach, Bir Bu Hosr, and Bir Bu Zerreigh

The trail turns east by southeast.

880 km Wells.

The trail crosses a series of dunes which are not too difficult to negotiate. It then reaches the Jabal al-Gardaba , consisting of table -top or conical isolated mountains.

The trail then proceeds southeastward

982 km Exit from Jabal; slightly rolling terrain.

1091 km At-Tag (Kufra). (Photograph No 91)

Radio station; airport.

1094 km; Al-Tigurf (elevation 395 meters)- population 2500.

7. Road and trail connections to Giarabub.

a) Tobruk - Giarabub (280 km) . The road branches off at the 1689 km marker of the coastal highway (Litoranea). As far as the el-Adim airport (20 km from Tobruk), it has an asphalt surface; from there on it is a trail of fair quality.

0 km Tobruk - cf. Coastal Highway, 1678- 1689 km markers.

10 km Fork. The Giarabub road branches off the coastal highway. It ascends the northern edge of a plateau. Beyond Sghifel al-Adim it makes a second ascent, passing the al-Adim airport., on the left.

31 km Intersection of Benghazi- al-Abiat- al-Mechili - Amseat road. The road climbs over another gradient 130 to 161 meters high. It then leads to Hagfetes Nezha (elevation 182 meters) on a slight upgrade, passing to the right of the settlement. The road proceeds over the plain toward Bir-al-Gobi.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

The road then enters into the zone of gravelly deserts (Sirir). The frequent presence of black pebbles gives the ground a dark appearance.

143 km Uscechet-al-Heira - the road passes to the right of the trough of the Al-Ajeram Wadi

200 km Al-Garn-Al-Grein (elevation 127 meters) - The frontier turns toward the South, while the road turns southwestward and runs through flat terrain; then crosses an area with varied terrain features, dotted with table-top, isolated rocky mountains.

225 km The road crosses the trail coming from Tobruk.

230 km Al-Msalla (elevation 79 meters) at the edge of the plateau which dominates the plains of Giarabub. The plain is very wide and contains mostly young palm trees which grow wild. After descending over a gradient, the road continues through a very sandy and rocky desert dotted by rocky hills.

250 km Giarabub (Photograph No 90) - The plains extend between 29° 10' and 29°30' North Latitude and 24° and 25° East Longitude. There is a radio station.

8. Other roads in Cyrenaica.

a) Barce - Giovanni Berta

This asphalt road runs through Cyrenaica, approximately parallel to the Coastal Road (Litoranea).

0 km Barce. The road gradually ascends from the trough of Barce and soon reaches the edge of the Jabal, which is topped by the Ossario monument. Passing to the

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

left of the road to Cesario, the Barce-Giovanni Berta roads leads in a slight upgrade to the second gradient of the Jabal through a shrub forest of mastic and juniper trees. Stone bridge across the Wadi al-Gattara (photograph No. 64). The road reaches an elevation of 500 meters, then descends for 13 km to a road intersection (elevation 474 meters), and reaches Zaniet and Gsur.

Vegetation becomes more dense; mastic and juniper trees mix with strawberry plants and wild olive trees (remnants of abandoned plantations) and form the forest of Teenis.

27 km Teenis (elevation 440 meters) - population 2,000; radio station; drinking water; numerous wells and cisterns.

The road turns toward the south, runs across small barren hills which constitute the limits of the Teenis trough, ascends across arid terrain in an east-northeast direction and then crosses a sparse shrub forest, consisting mostly of mastic trees. The shrub forest then ends and the road proceeds across small hills bearing with olive treas. The road crosses the Wadi al-Maharzat.

56 km Maraua (elevation 510 meters) - population 1,000; drinking water; several wells.

The road turns northeastward into barren terrain, crosses the depression of a wadi, and reaches the Wadi al-Mesied, where there is a forest of tall trees.

74 km Bir al-Gandula - roman cistern

At an elevation of 430 meters the woods become sparse. Mountains and depressions interchange.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

91 km Slonta (elevation 735 meters) - population 2,000; drinking water; 14 wells with spring water and numerous cisterns. The road rises through difficult terrain in an east-northeast direction.

112 Km Al-Faidia

The road crosses in slight turns a series of depressions and hillocks with excellent pastures and numerous springs.

124 Km Al-Ghehab

139 Km Lamluda

The road meets the coastal road (Litoranea) at the 1,449 km marker and reaches Giovanni Berta.

151 Km Giovanni Berta.

b) Bengasi - Ridotta Capuzzo (Sollum)

Asphalt roads from Bengasi to Al-~~Abiar~~ ABIAR; natural ground with repairs under way from Al Abiar to Ridotta Capuzzo.

0 Km Bengasi

The road follows the railroad line through steppe-like terrain.

19 Km Benima (elevation 119 meters) on high ground; airport.

The road surmounts the steep gradient of the plateau, crosses the railroad, and turns toward the depressions (dolinas) of Haua Sadja and Haua Sebrek.

30 Km Ar-Regima (elevation 321 meters)

The road descends into the undulating depression of the plateau, crosses the railroad twice, and proceeds through the basin of Bu ~~[illegible]~~ MARYAM.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

59 Km — Al-ABYAR (elevation 290 meters)

A gravel road branches off to Barce (49 km).

The road climbs the second gradient of the plateau (400 meters high), bypassing Ain Jabara (well, drinking water) on the left. At first the terrain is covered with bramble, later it becomes steppe- and desert-like. It crosses flat wadis covered with fertile red soil, where a few sparse pastures may be found after rain occurs.

106 Km — The Wadi Uaduan is crossed

116 Km — Al-Charruba - on the Maerreb Wadi the road runs through slightly undulating or hilly terrain, covered with shrubs and sparse pastures.

144 Km — ZAWIYAT Ain-Neian - on the Sarmaluc Wadi in the western part of the Sirual.

The road leads through barren terrain with tracts of gravel desert (sarir) and sparse valleys..

172 Km — Hagfet Golgaf

The road crosses the valley of a stream, sometimes wet, filled with alluvial red soil. During the rainy season, motor vehicle traffic is difficult in this section.

The terrain is monotonous steppe-like.

232 Km — Al-Mechili (elevation 205 meters) radio station; 2 cisterns.

From Al-Mechili travel is continued on the so-called Trigh-Enver-Bey road, which crosses the entire Marmarica region from west to east. This is the main road for caravans traveling from Cyrenaica to Egypt.

The region is uneven and rocky, covered with sparse brush, and desert-like.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

262 Km The road abruptly turns south

320 Km Gadd al-Ahmar

The road continues through uneven, barren, and partially rocky terrain.

358 Km The so-called Trigh-al-Abd dirt road, which reaches the Egyptian border at Bir Ash-Sheferzem is bypassed on the right.

On the left there are the cisterns of Mteifel al-Kebir and Sidi Mufta (Elevation 179 meters), and farther to the right the well of Bir Belefarit (elevation 167 meters)

397 Km As-Sedrat (elevation 167 meters) junction; on the left, the motor dirt road to Tobruk (53 km); on the right, the dirt road to Bir Hacheim and Giarabub.

420 Km Al-Adam - the road crosses the Tobruk-Giarabub dirt road.

494 Km Gasr al-Arid

534 Km Shortly before Ridotta Capusso (Amseat), the road runs into the Coastal Road (Litoranea).

c) Derna - al-Mechili

Motor dirt road, 90 km long, built by army engineers in 1926.

The road crosses generally unobstructed, even, and open terrain. It also crosses the beginning of the Wadi al-Magta, proceeds through the Dahar al-Ardam (well), and bypasses the cistern of Al-Agla on the right.

The road then descends into the Wadi Maallegh and for 15 km follows the plain of the Gotnes Heslegun up to the Bu Zaaagh cistern. It then turns southwestwards and runs in a perfectly straight line up to al-Mechili.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

d) Giovanni Berta - Al-Mechili

Motor dirt road connecting the Coastal Road (Litoranea) with the large Bengasi - Ridotta Capuzzo road in the southern region of Cyrenaica.

0 Km Giovanni Berta - (Al Gubba)

3 Km Al-Awnat - well

7 Km Well of Bu Cjimal and Maaten Fersolla

14 Km Eluet Al-Mneiak - (elevation 583 meters)

The motor dirt road gradually ascends through several depressions, which form the beginning of the Ad-Chiaara and Ad-Dauai Wadis, and then crosses the Beluetut Wadi.

Flat terrain without vegetation is encountered, which provides an excellent substructure for the motor dirt road.

The road leads over the Wadi Ar- amla, crosses the sandy zone (ramla) and reaches al- Mechili.

68 Km Al-Mechili - located in a desolate rocky desert.

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Map 1

Topographical View and Road Network of Libya

Closed sand and dune areas (erg)

Plateau with rock desert (hamada)

Sirir

Mountainous areas

Important through escarpments

Oasis

Constructed highway first class

Constructed highway second class

Natural road, partly improved

Dirt roads

Caravan roads

Towns and villages or water places

Only the large units are indicated. The topographical features of the areas which are left white in vary.

Scale

0 50 100 200 300 400 500 kilometers

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
RESTRICTED

Map 2 - Climate, Vegetation and Agricultural Utilization of Libya

Coastal oasis (precipitation, 250 - 450 mm). Palm groves, irrigated cultivations.

Jabal zone with winter rains (250 - 625 mm). Vegetation of the Mediterranean area (macchie). Agriculture and cultivation of Mediterranean fruit trees. Artificial irrigation not absolutely essential, however always [redacted] beneficial.

Steppe (precipitation, 100 - 250 mm). Originally cattle-breeding area with occasional agriculture in years with sufficient precipitation. Colonial agriculture possible in areas in which wells for artificial irrigation are available.

Arid steppe and semidesert (precipitation, 50 - 100 mm). Insufficient and irregular precipitation for irrigation of any type of cultivation. Oasis cultivations are possible in areas with ground water. Sufficient natural vegetation providing ~~[illegible]~~ scanty pasture [redacted] for camels, donkeys, sheeps and goats.

Desert. Often without any rain for many years. Oasis cultivations exclusively.

Scale

0 100 200 300 400 500 kilometers

RESTRICTED
CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
RESTRICTED

Map 3

Oasis of Marada

Scale: [redacted]200 000

Marada Latitude 29° 13' 16" 60 N
Longitude 19° 12' 45" 67 E

RESTRICTED
CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
RESTRICTED

Map 4

Oasis Group of Gialo

Scale: [redacted]/200,000

△ Augila Latitude 29° 08' 58" 16 N
Longitude 21° 14' 38" 64 E

△ Gialo Latitude 29° 01' 44" 67 N
Longitude 21° 32' 52" 50 E

CONFIDENTIAL
RESTRICTED

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
~~RESTRICTED~~

Map 5

Giarabub and Surroundings

Roads for vehicular traffic

Roads not passable for vehicular traffic

Wells with spring water

Cisterns

Scale: 1:200,000

CONFIDENTIAL
~~RESTRICTED~~

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
~~RESTRICTED~~

[Map 6]

Water Supply in the Hinterland of Tripoli

Scale: 0 5 10 15 20 25 kilometers

Yeld ~~Production~~ of Water Places	Wells: Drinking Water	Wells: water not suitable for drinking	Springs or Artesian Wells: Drinking Water	Springs or Artesian Wells: water not suitable for drinking	Cisterns: Drinking Water
Small, sufficient for local use only	●	○	▲	△	■
Good; wells or springs produce approximately 200 liters per hour. Cisterns with larger water supplies	◒	◒	◭	◬	▣
Sufficient; wells or springs produce up to 1000 liters per hour	●	◔	▲		
Very plentiful; suited for water supply. Hourly production of the water place is indicated on the map in cubic meters.	◉	◯	◭		

Escarpment of the Nafusa Jabal

Coastal Oasis; areas with numerous small wells in addition to the water places indicated on the map. Ground water ~~[illegible]~~ not far below surface.

First and second class roads

CONFIDENTIAL

~~RESTRICTED~~

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED CONFIDENTIAL

Figure 1 -- Distribution of Rainfall

L I B Y A (Tripolitania and Cirenaica)

More than 200 millimeters of precipitation

100 - 200 millimeters of precipitation

Desert

Edge of plateau

Scale: 0 100 200 300 kilometers

CONFIDENTIAL
RESTRICTED

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
RESTRICTED

Figure 2 -- Map of Colonization in Cirenaica

Coastal plains

Escarpment

Jabal - Terrace

Jabal - Plateau

Highways

Border of the area suitable for colonization

Italian concessions; ~~[illegible]~~ plantations and arable land; ~~[illegible]~~ pasture land

Mixed area of concessions and private Italian property in the plains of Barce

Ancient protectorate

Agricultural settlement of the "Ente per la Colonizzazione" (Colonization Agency)

Settlement centers

Zones to be taken over soon by the "Ente per la Colonizzazione" (Colonization Agency)

Planned settlement centers

Scale: 0 25 50 kilometers

~~RESTRICTED~~

CONFIDENTIAL

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

CONFIDENTIAL
~~RESTRICTED~~

Figure 3 -- City Map of Benghasi

Arabic settlements and cemeteries

Sudanese camps

New Italian city

City wall, fortifications (most of them have been broken up)

Scale: 0 250 500 kilometers

CONFIDENTIAL
~~RESTRICTED~~

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2

RESTRICTED

Figure 4 - City Map of Tripoli

Old City

Scale 0 0.5 1 kilometer

50X1-HUM

RESTRICTED

Declassified in Part - Sanitized Copy Approved for Release 2012/05/21 : CIA-RDP82-00039R000100070066-2