

"THE CHANGING LANDSCAPE OF MALTA

DURING THE RULE OF THE ORDER

OF ST. JOHN OF JERUSALEM" 1530-1798

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Being a thesis presented for the degree of
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F O R W A R D.

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B.W.B.

October, 1963.

ABBREVIATIONS USED IN THE TEXT.

- A.C. - Archives of the Cathedral, Mdina.
- A.M. - "Archivum Melitense."
- A.O.M. - Archives of Malta. Housed in the Royal Malta Library.
- A.S.M. - "Archivio Storico di Malta."
- B.M. - British Museum.
- Lib. Bull. - Liber Bullarum.
- Lib. Conc. - Liber Conciliorum.
- M.B.D. - "Malta: Background for Development," H.Bowen-Jones, J.C.Dewdney, W.B.Fisher, Durham, 1961.
- M.H. - "Melita Historica."
- N.D. - An undocumented statement.
- P.P.S. - "Proceedings of the Prehistorio Society."
- P.R.O. - Public Records Office.
- R.M.L. - Royal Malta Library Manuscript.
- S.J.G. - The Grand Priory in the British Realm of the most Venerable Order of the Hospital of St. John of Jerusalem. St. John's Gate, London.
- Treas.A. - Treasury Collection A of the Royal Malta Library.
- Treas.B. - Treasury Collection B of the Royal Malta Library.

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INTRODUCTION.

When the crusading Order of St. John of Jerusalem was chased from the Island of Malta in 1798, by Napoleon, it took only hand luggage. The great library, the treasures of St. John's Conventual Church, the silver plate in the Auberges and the Hospital, the bulls, deeds and records all remained behind. The French seized the treasures, melted down the plate and even used some of the documents to fire furnaces. Fortunately the bulk of the archives of the Order remain and these have been the primary source for this study.

Napoleon described Malta as the "strongest place in all Europe" for during the two and a half centuries of its rule the Order had developed an almost impregnable chain of fortifications around the Grand Harbour and Marsamkett. Behind the fortifications a number of new towns had been laid out where the inhabitants prospered on the spending of the Order or on trade and piracy. The countryside, too, was prosperous and whilst the Maltese had grown too numerous for the resources of their country most deficiencies were supplied by the wealth of the Order. By 1798, in an unspectacular way, Malta was amongst the most prosperous communities in Europe. It had not always been so. When, in the first half of the sixteenth century, the Order was offered Malta as a base it despatched a commission to assess the Island's suitability. The commissioners described the Island as being very poorly developed, the inhabitants as miserable and a residence there as almost insupportable. In 1530 there were 15/20,000 inhabitants, by 1798 they numbered around 90,000, new towns and villages had grown up, several industries

had developed and the Grand Harbour, with its fine facilities, was an important centre of trade. There had been some striking social changes too as the small medieval community of 1530, with something of a North African flavour, had expanded in numbers and in wealth and come into more general contact with the life of Europe.

These social and economic developments brought many alterations to the landscape of Malta and this study has attempted to trace the evolution of these changes.

The Knights did not simply live in Malta, they ruled it. Thus the archives of the Order contain much material which is about Malta and the problems of administering the Island. In addition the Order owned a large part of the Maltese economy and records relating to these assets display a cross section of the Island's economic life. The Knights possessed large areas of urban and rural property, they completely controlled a number of industries and were involved in others as customer or regulator. There were, of course, sectors of local economic life into which the Order's penetration was only superficial. Thus the strengths of any study based on the archives of the Order is bound to reflect the strengths of the documentary cover. Occasionally other sources are available but

i.e., this is a basic fact of life in Historical Geography - documents are the mainsprings of most studies and unbalanced pictures can emerge if certain desirable sources are lacking. This fact can be illustrated quite simply. The peasant farmer can leave no written records through lack of education. The middlemen, who may market the peasants produce, whilst possibly possessing a rudimentary education are too small to leave lasting records,

their businesses and records tend to die with them. Small traders are afflicted with the same problems even where they owned enough capital to buy a boat. A little ill-luck, a few bad debts, the closing of credit, bankruptcy, the business and all its records, dispersed and forgotten. It is normally the larger organisations which survive hard times and preserve records. Unfortunately many sectors of the Maltese economy in the seventeenth and eighteenth centuries were dominated by small one man businesses. Now the Order were only interested in such people in general terms - the health of a particular trade, the regulation of the quality of its products, the need for protection from foreign competition, etc, are mentioned in the archives but frequently it is only by inference that any knowledge on the detailed organisation of an industry can be discerned.

There are other sources. Frequently traders are taken to court and during the proceedings a picture may emerge of the way in which a particular economic activity is run. The Records of the Law-Courts still exist in Malta and although the collections are uncatalogued some work is being done in them on eighteenth century trade. As yet none of this work has been published and in the meantime the frequently undetailed nature of the sections on trade and industry, in this study, is to be regretted.

Small farmers and traders leave wills and other documents related to their property and many of these are preserved in the Notarial Archives. This source has been used to a limited extent but no attempt has yet been made to produce a detailed analysis of the content of wills

as they relate to various trades.

Yet another source which may give some information on small farmers and traders are the accounts of contemporary writers. But here there are great dangers for we are moving into the shadow land of secondary sources where writers retell what they have been told, surmise what they do not know, write what they are expected to write and record legends as facts. There are exceptions and men like Giovanni Abela¹ and Agius de Soldianus² have done a great deal to advance our understanding of their times. Too often, though, it is all too easy to find hearsay evidence and the careless use of sources which a writer had at his disposal.

ic. This leads to the problem of what is a primary source? Many Treasury records are primary. Records of payments for work done or the purchase of goods, etc., etc., unless elaborate embezzlement has taken place, are basic raw material with the chances of error reduced to a minimum. On the other hand the records of the Order's Council may be loaded with errors. Councillor's may have their facts wrong, and it is frequently difficult to check if a decision of the Council was implemented.

l.c. In the end, however, the Historian must judge from the evidence before him and if only one account of a sixteenth century event is available then the material must be tested and used until found wanting. The l.c. Historical Geographer is fortunate in that he can frequently test much of his material against the landscape and thus eliminate error.

Yet another problem is the volume of source material available. Documentary evidence for this study has been gleaned from the Notarial

1. Della Descrizione di Malta, Malta, 1647.
2. R.M.L. 141. Mid-eighteenth century.

Archives, the British Museum, the Public Records Office and St. John's Gate where the English branch of the Order now has its headquarters.

The major source has been the documents housed in the Royal Malta

l.c. Library which contains not only the Archives of the Order but many documents relating to medieval Malta and the Università, the Maltese civil governing body. The archives of the Order alone consist of some 10,000 volumes. Now whilst much of the material is irrelevant to a study of Malta what remains is formidable and no claim is made that it has all been searched. Add to this the untouched documents in the Notarial Archives and the Law-Courts, not to mention those in Catania, Messina, Palermo, Naples and the Vatican Library, and clearly the task would probably outlive any one worker. Again the Historian can only work on the evidence before him and whilst it is often not possible to get the whole truth a study can contain nothing but truth.

Because of the unevenness of source material and its utilization this study is, in some respects, unbalanced. There are sections where it is reasonable to conclude that all that could be added is detail. Elsewhere the study moves from isolated reference to isolated reference unable to find a pattern for lack of evidence. Such difficulties are

l.c. part of Historical Geography and they bedevil most studies.

Much of Maltese life, as it exists today, was shaped during the rule of the Order of St. John. The patterns of distribution developed in the sixteenth, seventeenth and eighteenth centuries have shaped a great deal of what exists today. The early patterns, in turn, were influenced by what had gone before and "the past which an historian

studies is not a dead past, but a past which in some sense is still living in the present history is concerned not with 'events' but with 'processes'; 'processes' are things which do not begin and end but turn into one another; if a process P_1 turns into a process P_2 , there is no dividing line at which P_1 stops and P_2 begins; P_1 never stops, it goes on in the changed form P_2 , and P_2 never begins, it has previously been going on in the earlier form P_1 . There are in history no beginnings and no endings. History books begin and end, but the events they describe do not".¹

1. R.G.Collingwood, An Autobiography, 1939.

CHAPTER I

THE PHYSICAL BACKGROUND.

There are many difficulties in writing a chapter outlining the physical background for a study which deals with any period but the present. The difficulties spring from the fact that the physical components of a landscape are liable to change. To describe the physical background existing today is not necessarily to describe it as it existed several centuries ago. Soils, climate, natural vegetation, drainage, etc, are all liable to undergo profound change with the passing of time and as a result of human intervention. What is more, these changes, unless catastrophic, are unlikely to be well documented. Climate may fluctuate slightly but critically and we are unlikely to find a direct record of such processes for it is only the exceptional drought or storm which is recorded. Soils can be altered by processes, both natural and human, which operate so slowly that in the eyes of observers conditions always remain normal.

GEOLOGY.

Malta is made of Tertiary rocks of the Miocene period. Overwhelmingly the geological succession is composed of limestones interspersed by some clays and a bed of greensand. At the head of the succession there are a number of recent deposits which are largely a product of the Pleistocene period.

The first adequate descriptions of the geology of Malta were published in the nineteenth century. By 1890 and the publication by John Murray, of 'The Maltese Islands, with special reference to their Geological Structure' in the 'Scottish Geographical Magazine', the picture was virtually complete. Since that time our knowledge of Malta's geology has only been enlarged in minor ways.

Murray set out the succession as follows:-

- | | |
|--|-----------|
| 1. Upper Coralline Limestone (exceeding) | 530' |
| 2. Greensand | 0 - 50' |
| 3. Blue Clay | 0 - 230' |
| 4. Globigerina Limestone | 75 - 680' |
| 5. Lower Coralline Limestone (exceeding) | 626' |

In recent years, as a result of borings made in an abortive search for oil, the thicknesses of the beds have become known in greater detail.

The measurements given above are based on this work.¹

At the head of the solid succession stands the largely unbedded UPPER CORALLINE LIMESTONE. Lithological variation within this bed is great - the limestone "being sometimes rubbly, sometimes granular and porous, at other times compact and crystalline". The utilization of land underlain by the Coralline is adapted to these variations.

Whilst they are protected from the atmosphere the non-crystalline portions of this bed are friable. Once exposure takes place the rock acquires a tough outer shell and soil forming processes are unable to generate material quickly enough to balance erosion losses, except where there is a concentration of debris in solution hollows.

1. H.R.House, K.C.Dunham, J.C.Wigglesworth, M.B.D., chapter 1.

GREENSAND.

The maximum thickness of the Greensand is only some 50' and it does not outcrop extensively. The most important feature of this bed is the control it exerts on the erosion of the overlying Upper Coralline. The Greensand is quickly removed and this leads to the undermining and collapse of the Upper Coralline escarpments.

The rock is useless as a building stone and soils developed on it have poor moisture retention properties.

THE BLUE CLAY.

The Blue Clay varies greatly in thickness and is missing in places. In some areas the clay, which is malleable, has been forced outwards by the pressure of the rocks above and covers extensive tracts of hillside.¹ This bed is particularly important as, being impervious, it arrests the passage of percolating ground water and creates the upper, perched, water table. The springs which flow out at the junction of this bed with the one above have been the basis of a zone of irrigated gardens. Soils developed on or just below the Blue Clay have good moisture holding qualities. The clay has been used for pottery.

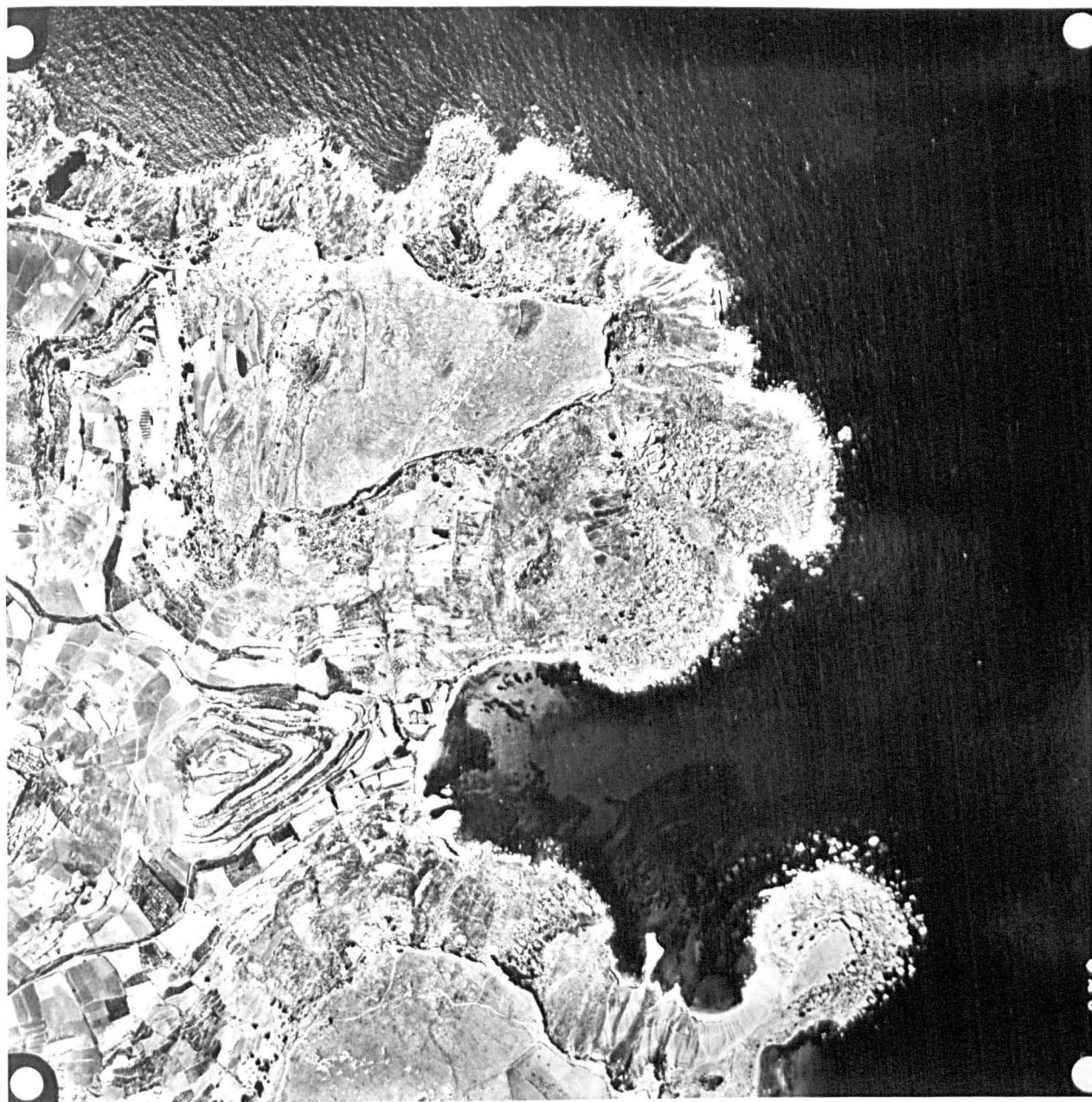
THE GLOBIGERINA LIMESTONE.

By far the greater part of Malta is underlain by Globigerina limestone. Again this formation shows considerable lithological variation, which results in important effects on the landscape.

1. John Murray, op. cit. 1890, p.466.

Fig. 1:1

Part of the west coast of Malta. This figure illustrates the control which the Greensand exercises over the recession of the Upper Coralline escarpment.



Nine or ten divisions of this bed have been recognised¹ although some are only developed locally. The formation can be broadly divided into upper, middle and lower sections by the presence of two beds of phosphatic nodules. Such phosphatic deposits are common throughout the Globigerina but only the two just mentioned extend throughout the Island.

The lower Globigerina provides the Island's most important building stone, known locally as 'Franka', and throughout history quarries have been extensively developed where it outcrops.

The middle Globigerina consists principally of "white marly limestones" whilst the upper portions of the highest division tend to be marly and blue in colour. This causes some confusion when trying to separate these beds from the overlying Blue Clay. This upper Globigerina is almost useless as a building stone but soils developed on it retain moisture well with important effects on dry farming potentialities.

LOWER CORALLINE LIMESTONE.

In general this bed is similar to the Upper Coralline but tends to be more crystalline.

The building stone excavated from this bed is known as 'Zonqor.' Today it is used for ornamental work although during the rule of the Order of St. John it was used extensively for the facing of fortifications, as it was more resistant to sea spray than 'Franka'.²

Outcrops of this bed are not widespread, karstic features are well

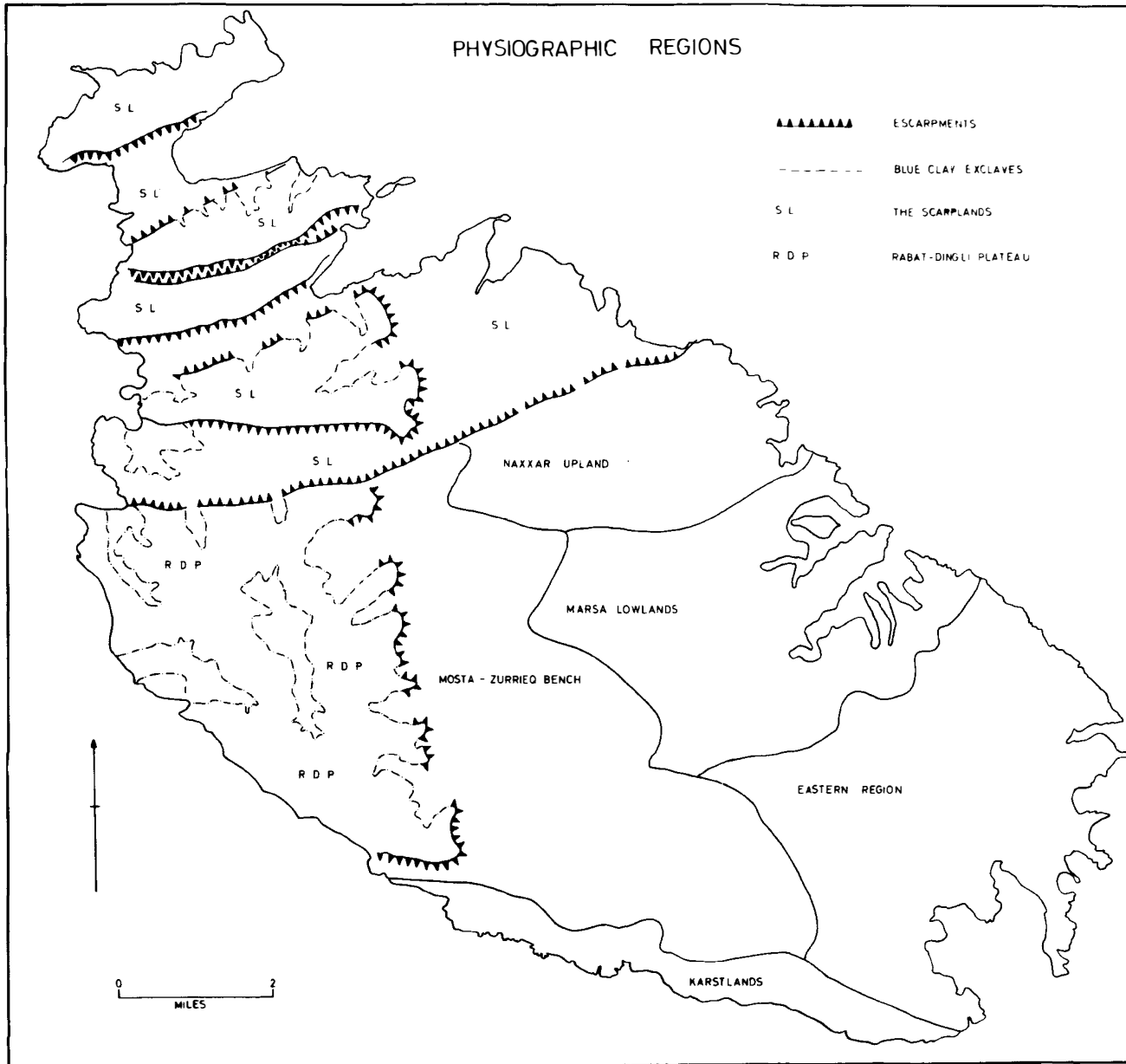
1. John Murray, op. cit. 1890, p.472 and H.R.House et alia M.B.D, p.27.
2. G.A.Ciantar, Malta Illustrata, vol.1, Malta, 1772, p.408.

Fig. 1:2 - The Great Fault near Gharghur. The Lower
Coralline is exposed along the fault scarp.



Fig. 1:3 - Physiographic Regions.

PHYSIOGRAPHIC REGIONS



(g) The Eastern Region.

(h) The Naxxar Upland.

No standard basis has been adopted in the delimitation of these regions, some are descriptive and others are genetic.

a) THE SCARPLANDS.

To the north and west of the Great Fault are a group of smaller fractures which traverse the Island in a roughly east-west direction. The movement along these faults has been considerable and relatively recent and they have given rise to a series of limestone ridges separated by depressions. From north to south the ridge-depression sequence is as follows:-

	<u>Maximum Height</u>	<u>Minimum Height</u> (in feet)
Marfa Ridge	408	100
Għadira - Hofra Depression		
Mellieħa Ridge	485	260
Mizieb Depression		
Baida Ridge	275	200
Pwales Depression		
Wardija Ridge	450	225
Bingemma - Wied il Għasal Depression		

The maximum height of the ridges varies between 485' and 275' and as they are usually steep sided they create transport problems within northern and western Malta. Not all the limestone blocks have received equal elevation, nor are they all aligned in the same way. Whilst all have a tendency to dip eastwards some have been tilted, in varying degrees, along a north-south axis. This has affected the drainage patterns and

Fig. 1:4 - Upper Coralline Karst on the Marfa Ridge.



thus, the availability of water within the depressions.

The depressions are floored by Upper Coralline limestone except in the Għasel depression where Lower Coralline and Globigerina limestones are developed. Characteristically the solid geology is overlain by several feet of recent, alluvial, deposits washed down from the adjoining ridges. The seaward ends of the depressions are normally choked with debris and there is evidence of recent rises in sea-level.

In broad the drainage system, which trends predominantly west to east, is adjusted to the pattern of faulting although there has been some evolution of this simple scheme. In the west small wiefs^(valleys) have developed which have started to capture the headwaters of the longer, eastward flowing, 'streams'. All streams in Malta are ephemeral and, in the present climatic conditions, only flow after heavy rain.

It is possible that the Bingemma depression formerly found an outlet to the sea between Għallis (M.R.4979) and Madalena Towers (M.R.5277) but a capture has united it with the Għasel depression and, eventually, Salina Bay. This capture has resulted in the virtual abstraction of the former dividing ridge.

At the edges of the limestone ridges subsequent streams have developed valleys and, in the process, enlarged the Blue Clay outcrops thus providing a physical background well suited to irrigation farming.

The relief of this region shows considerable variety and whilst the depressions filled with alluvium offer interesting possibilities for agricultural development the steep sided, dividing ridges make it

difficult to integrate the area with the remainder of the Island. In a profound way these facts of physical geography have influenced the history of the region.

b) THE RABAT-DINGLI PLATEAU.

The plateau reaches its maximum elevation in the west where it exceeds 800'. In the east 600' summit levels predominate. The whole has been gently tilted to the east and is capped with Upper Coralline limestone. The region is much dissected and there is a considerable variation of relief. In the centre of the upland a group of streams, draining into the Wied Tal - Qlejga (M.R.4573), have been responsible for a considerable lowering of the plateau and have removed the Upper Coralline over a large area, exposing the Blue Clay.

Minor fluctuations of the plateau surface are important as they influence the possibilities of soil accumulation and water supply. In this respect the distribution of solution hollows and valley head sink holes is significant.

The edge of the plateau is usually well defined by cliffs formed of Upper Coralline limestone. At the base of these cliffs there is frequently an accumulation of Coralline boulders - the products of recession - which have an important influence on agriculture and field boundaries. At the western edge of the plateau high cliffs are developed below the 800' levels. The descent to the sea is accomplished by two lines of cliffs, composed of Upper and Lower Coralline respectively, with an intervening area of gentler slope. In this last area down rolled Coralline

Fig. 1:5 - Bahrija. The Upper Coralline scarp.

This remote plateau top was a Bronze
Age village site. The terracing here
is Arab in origin.



boulders produce a characteristic landscape which is recognised and named locally - the Rdum.

c) THE BLUE CLAY EXCLAVES.

These exclaves are well developed throughout the two regions just discussed wherever the overlying Upper Coralline and Greensand ^{has} ~~has~~ been eroded. The exclaves are particularly well developed in the small valleys fringing the Rabat-Dingli plateau and the ridges of the north-west. The springs occurring at the valley heads, combined with the good moisture retention properties of soils developed on the Blue Clay, offer rich possibilities for irrigation farming.

d) LOWER CORALLINE KARSTLANDS.

The crystalline Lower Coralline limestone is resistant to erosion and produces much of the cliff scenery found along the west coast of the Island. There are two main exposures of this Coralline limestone; in the south-west corner of the Island and as a mantle around the northern edge of the Naxxar uplands. Relief is dominated by karst features and soil is not usually well developed. Numerous small inliers of this limestone are found, usually in association with faulting, in various parts of the Island and again karst features are developed.

e) THE MOSTA-ZURRIEQ BENCH.

In the west the bench is defined by the Rabat-Dingli plateau and falls gently to the east where it is roughly delimited by the 250' contour. The

Fig. 1:6 - The Karstlands. There are two Neolithic
Temples - Mnaidra and Hagar Qim - on the
exposed limestone overlooking the sea.



transition between this region and the Rabat - Dingli plateau is marked by relatively steep slopes which have a considerable influence on crop distribution. Rather less steep slopes are generally encountered at the eastern edge of the region and here there are a number of spurs which have proved important rural settlement sites.

f) THE MARSA LOWLANDS.

The wields running across the last region have incised themselves deeply into the edge of the bench as they fall into the Marsa Lowlands. The Wied Incita (M.R.4971) tumbles 100' in hardly half a mile and the Wied Hanzir (M.R.5268) falls 200' in one mile.

The two harbours, Marsamxett and Grand Harbour, are separated by a ridge running from Attard (M.R.4972) to Valletta. This ridge has had an exceptional influence on the Island's settlement pattern, as have another group of ridges running into the sea from the southern shore of the Grand Harbour.

The drainage system running into Marsa Creek, is well developed and a relatively large area of the Island drains into a great kidney shaped lowland between the head of ^{the} Grand Harbour and the village of Qormi ^{de u} (M.R.5170). Here a wide expanse of flat, alluvial, land has been created which is liable to flooding in wet weather.

That part of the Marsa lowlands which drains into Marsamxett is less well developed and consists principally of the Msida valley (M.R.5272).

g) THE EASTERN REGION.

This is a region of gentle relief developed in an area predominantly underlain by Globigerina limestone. Steeper slopes are encountered in a

number of wiefs which run in a general west-east direction. Where these valleys meet the sea a number of bays are developed. The great horseshoe bay of Marsa Scirocco is Malta's largest harbour but the shelter it provides is inadequate. St. Thomas Bay and Marsascala are both small and poorly protected from easterly winds.

h) THE NAXXAR UPLAND.

This area, composed largely of Globigerina limestone, rises smoothly to summits which approximate to 425'. The region merges smoothly with those around except in the north where it terminates sharply at the Great Fault. Here there is a large inlier of Lower Coralline limestone and karst features are well developed.

Finally it should be stressed that this account has done no more than outline some of the more prominent relief features. It certainly does not encompass all the landforms which are geographically relevant. Man's response to the Maltese environment has been so detailed, so shaped by bedrock and, what in most areas we would call minor landforms, that it is almost impossible to generalize with validity.

CLIMATE.RAINFALL.

The mean annual rainfall of the Maltese islands is slightly in excess of twenty inches. The months of June, July and August are usually completely dry. The rainy season normally commences in September but frequently, after the initial downpours marking the change of season, the weather cools and calms into what is known locally as St. Martin's summer. Usually October is not subject to heavy rainfall and the bulk of the annual total falls in November, December and January. The rainy season lasts from September to March and the months of April and May, over the last century,¹ have experienced averages of less than one inch although both are capable of recording considerable wetness. In fact, paradoxically, a characteristic of the climate of Malta is its ability to act uncharacteristically. Mitchell and Dewdney² have analysed the Island's annual rainfall totals from 1841-2 to 1956-7 (a rainfall year beginning on the 1st September). The variability of annual rainfall is shown in the following table.

<u>Total Annual Rainfall</u>	<u>Number of Occurrences</u>
Less than 10 inches	4
10 - 14 inches	9
15 - 19 "	42
20 - 24 "	35
25 - 29 "	20
30 - 34 "	3
35 - 40 "	3

They go on to point out that the totals for individual months are no

1. M.B.D, p.48.

2. Ibid.

less variable "only four, November, December, January and March, have not, on at least one occasion, been months of complete drought and even these four have recorded minimum totals of only a fraction of an inch".

What documentary evidence we have suggests that similar conditions have existed at least since the end of the Middle Ages. In 1473,¹ during a prolonged drought, seeds failed to germinate and abandoning the Island was considered. Murray² states that between 1467 and 1470 no rain fell in Malta at all. During the rule of the Order of St. John there are frequent documentary references to droughts. Early in the eighteenth century the rains of late spring, which radically influence the summer grain harvest, were frequently deficient.³

Another important aspect of rainfall is its intensity and the limitations this places on the cultivation of slopes. Describing the effects of a storm which took place in October 1957 Mitchell points out that even on terraced hillsides much damage was done by sheet erosion and gullyng.⁴

A large part of Malta's rainfall is brought in by north-westerly air-streams and is orographic. Uplift is stimulated by the forcing up of air as it contacts the high ground in the north and west of the Island.

1. E.R.Leopardi, 'Bandi, Transactions of the 'Consiglio Popolare' etc., of the XV Century', M.H., vol.2, 1959, p.255.
2. op. cit. 1890, p.452. N.D.
3. e.g. 1719 April, 1722 April, 1724 April, A.O.M. 267, and April 1732, A.O.M. 268, f.209.
4. P.K.Mitchell, 'Studies in the Agrarian Geography of Malta,' Pt.1, 'Moisture Characteristics of the Climate,' Department of Geography, the University of Durham, 1959.

Thus the north-west of the Island records higher rainfall totals than the south-east whilst the lowest totals are recorded in the extreme south-east around Marsaxlokk.¹ However, the overall pattern is not quite as simple as this and other factors are operative particularly at the beginning, September, and the end, March - April, of the rainy season. During these periods a rather different pattern of rainfall distribution is apparent with the highest totals being recorded in a more central area of the Island. Bulmer and Stormonth² have suggested that "in situations of little general wind there tends to develop, in the summer months, a convergent system of sea breezes which in many cases ultimately results in a closed anti-clockwise circulation about a centre not far from the airfield at Luqa" (M.R.5268). As a result of this convective clouds form and showers develop. During the months when this system is operative the highest rainfall totals are recorded at Naxxar (M.R.4974) and in the Luqa-Siggiewi area. The Naxxar maximum is explained by topography and possibly juxtaposition to the north-west wind, whilst the Luqa maximum is related to the convective circulation already mentioned which draws up moist air from the twin harbours "giving the heaviest rainfall in places like Floriana and Luqa where there has been some uplift of the air over rising ground as well". Again this work does not appear to offer a complete explanation of Malta's rainfall distribution. Clearly, if operative, the Island's convective circulation and the resulting rainfall may

1. M.B.D, p. 75.

2. B.F.Bulmer, and K.Stormonth, 'The Rainfall of Malta,' H.M.S.O., M.O. 676, 1960.

have important influences on agriculture. It may offer a partial explanation for the widespread development of dry farming in parts of central Malta and its virtual absence in the south-east.

WINDS.

The winds which affect the Island are of considerable importance. Fruit trees have to be planted in sheltered valleys or be protected by high walls. Even relatively hardy trees, like the carob, are frequently protected by semi-lunar walls covering the directions from which harmful winds may be expected. In the Pwales depression (M.R.4377) fruit trees show an interesting pattern of distribution. The north facing wall of the valley is subject to the powerful 'Majjistral' (N.W.), 'Grigal' (N.E.) and 'Tramuntana' (N.) winds and it is in the small valleys of the south facing wall that the majority of fruit trees are found. In the same valley cereals and legumes are grown to provide wind breaks.¹ There is evidence to suggest that many of Malta's plethora of field walls were built because farmers felt some crops could not be grown successfully without the protection they provided.²

The 'Xlokk' (S.E.) and 'Nofsinhar' (S.) winds blowing up from the North African deserts in summer are capable of withering dry farmed crops.

The 'Grigal' which blows straight into the mouths of ^{the} Grand Harbour and Marsamxett was, and still is, capable of restricting their use for considerable periods.

1. M.B.D, p.243.

2. Treas. B. 289, f.16.

Still air conditions are recorded on very few days of the year.

1. The most persistent wind is the 'Majjistral' which is recorded on
2. 29 per cent of the days in an average year. The 'Grigal' (15 per cent),
3. 'Xlokk' (13 per cent), 'Tramuntana' (6 per cent) and 'Nofsinhar' are
also frequently recorded. Thus north and northwesterly air streams are
recorded on 35 per cent of days and this tends to moderate the summer
maxima but gives rise to distinctly cool conditions in winter.

WATER SUPPLY.

There are two water tables. The upper, perched, table is based on the Blue Clay which pounds up water percolating down through the Upper Coralline and Greensand. The junction of the Blue Clay with the overlying beds is marked by a line of springs.

The lower water table is developed in the Lower Coralline and Globigerina Limestones.

Most of the present domestic water supply is extracted from the lower water table and this has been true historically although, as early as 1614, Aloph Wignacourt, the then Grand Master of the Order of St. John of Jerusalem, had an aqueduct built which tapped the upper table near Rabat and ran down to Valletta. This was exceptional and most towns and villages, not in the immediate vicinity of the upper table, relied upon wells which tapped the lower one.

Clearly in the conditions of rapid runoff which normally exist in Malta considerable efforts have to be made to conserve what water is available. Thus, during the period of the Knights, and indeed right down to the present day, rain falling onto the roofs of virtually all buildings was piped into cisterns. In certain areas the provision and maintenance of such cisterns was obligatory.

Irrigation water has been provided both by driving shafts down to meet the water tables and, in the case of the upper one, by exploiting the seepage associated with the Blue Clay outcrop. The upper table is also tapped by driving levels into hillsides.

CHAPTER II

THE HISTORICAL BACKGROUND.

Man came late to Malta. Sicily was not colonized until the Old Stone Age was nearly complete and although there are a number of Mesolithic sites on that island, none have been found on Malta. Probably it was not until the great technical innovations, which marked the Neolithic, that Man developed the means to cross the sixty mile strait between Sicily and Malta. Almost certainly the Neolithic colonizers came to a virgin land. The Island was well wooded and fertile.¹ The natural fauna consisted of wild boar, deer, fox, hare and, possibly, a primitive form of ox. Some elements in this fauna suggest a fairly open type of woodland. The vegetation and soil cover helped to conserve the Island's rainfall, and it was almost certainly less arid than it is today.

The earliest settlers to come to Malta belonged to the first phase of the Neolithic, found in this part of the world, who used a characteristic style of pottery known as Impressed ware. The date of the first colonization was probably about 3,800 B.C.² and it seems to have been launched from Sicily for the earliest phases of the Neolithic in both Islands, (the Stentinello and Għar Dalem phases) are closely akin. The cultural sequence which develops from the Għar Dalam phase is distinct-

1. J.D.Evans, Malta, 1959, p.39.

2. D.Trump, Antiquity, 1963, p.302.

ively Maltese and cultural uniformity between Neolithic Sicily and Malta can only have lasted for a short time, whatever the contacts between the two Islands.

The earliest inhabitants practised mixed farming. The arable side was dominated by cereal production and the stock consisted of sheep, goats, oxen and swine. There is internal evidence for the presence of all these animals. Representations of sheep and cattle have been found at the type site of Għar Dalam¹ and at the type site of the final phase of the Neolithic - Tarxien - numerous representations of cattle, sheep, goats and pigs have been found.² Finds of animal bones around contemporary hearths and remains of sacrificial animals in the Neolithic temples are other sources of evidence.

At present it is impossible to state, with any certainty, what the ecological consequences of the Neolithic occupation were. All that can be said is that what evidence we have indicates that, by Neolithic standards, the population of Malta was relatively dense and it seems probable that many elements of the natural vegetation were removed. However, at the termination of the Neolithic in Malta, the Island was apparently deserted for about a century and it may well be that some regeneration of the vegetation cover took place.

Concerning another Neolithic contribution to the landscape we can be more certain. Dotted over the Island are some thirty Neolithic temples,

1. J.D.Evans, 'The Prehistoric Culture Sequence in the Maltese Archipelago,' P.P.S., vol. 19, 1953.
2. J.D.Evans, op. cit. 1959, pp.141-151.

in various states of preservation. The earliest Maltese buried their dead in simple rock cut tombs but, in the later stages of the cultural sequence, they reproduced and developed the form of the tombs above ground in the structures of the massive trefoil temples.¹ All the temples are built primarily of Coralline limestone, except Magar Qim (M.R.4965) where Globigerina limestone was used. Globigerina was also used extensively in many temples for the construction of internal fittings and decorations. Quite how this extensive development of religious building was financed is in dispute. Bernabò Brea² sees Malta as a great centre of Neolithic trade in this part of the Mediterranean. However, Evans³ and Trump⁴ will have none of this. Both have undertaken excavations in Malta and they have found few objects to substantiate the trade links Brea postulates.

Around 2,000 B.C. the community which had built the impressive Neolithic temples died. Whether death was due to disease, drought,⁵ or a religiously inspired migration, or some other cause, is unknown. In any case the Island seems to have been deserted for some years.

THE BRONZE AGE.

Recolonization took place by what are known as the Tarxien Cemetery people but today little remains of these inhabitants apart from some twenty dolmens dotted over the landscape.

1. J.D.Evans, op. cit. 1953, p.90.
2. Antiquity, vol. 34, 1960, pp.132-137.
3. Op. cit. 1959 and Antiquity, vol. 34, 1960, pp.218-220.
4. Antiquity, vol. 35, 1961, p.303 and Antiquity, vol. 36, 1962.
5. D.Trump, 'The Later Pre-History of Malta', P.P.S., vol. 27, 1961, p.259.

PRE-HISTORIC MALTA - CULTURAL SEQUENCE.

Phase.	Landscape Features.	
Għar Dalam	Only feature so far discovered, a wall 12 yards long.	3,800 B.C.
Grey Skorba		
Red Skorba		3,200 B.C.
Żebbuġ	A village site. Mud-walled dwellings	3,000 B.C.
Mgarr		2,800 B.C.
Ġgantija	Temples	2,400 B.C.
Tarxien	Hypogeum. Temples.	1,800 B.C.
Tarxien Cemetery	Dolmens.	1,400 B.C.
Borġ in-Nadur	Fortified settlement sites.	
Baħrija	Fortified settlement sites	800 B.C.

Arrival of New People

After Brea, Evans, and Trump.

The Tarxien people had occupied the Island for sometime before another group of Bronze Age people arrived (c.1400 B.C.) and annihilated them. This later group, the Borg in-Nadur people, started to fortify their villages. Whether or not raids were launched on Malta from outside is difficult to say but, raids there were. Trump¹ has suggested that population pressure built up at this time and resulted in "frequent outbreaks of warfare between village and village". The known villages of this period are all sited defensively. Normally they make little visible contribution to the present landscape, except in a few cases such as the type site Borg in-Nadur, where the fortifications can still be seen.

Another Bronze Age contribution to the landscape is the 'cart-tracks' which radiate from many Bronze Age village sites. (They have not been precisely dated within the period). These parallel ruts are probably not cart-tracks at all and may have been cut by slide-cars.² A number of things can be deduced from the presence of these ruts. Firstly, they must have been worn at a time when the limestones were still protected by a cover of soil and before ^{the rock} they had acquired, with exposure, a tough patina. Secondly their density over wide areas indicates that a tree cover was lacking in many places. Godwin³ has analysed a Bronze Age soil sample and shown that by the end of that period the vegetation cover did not include trees.

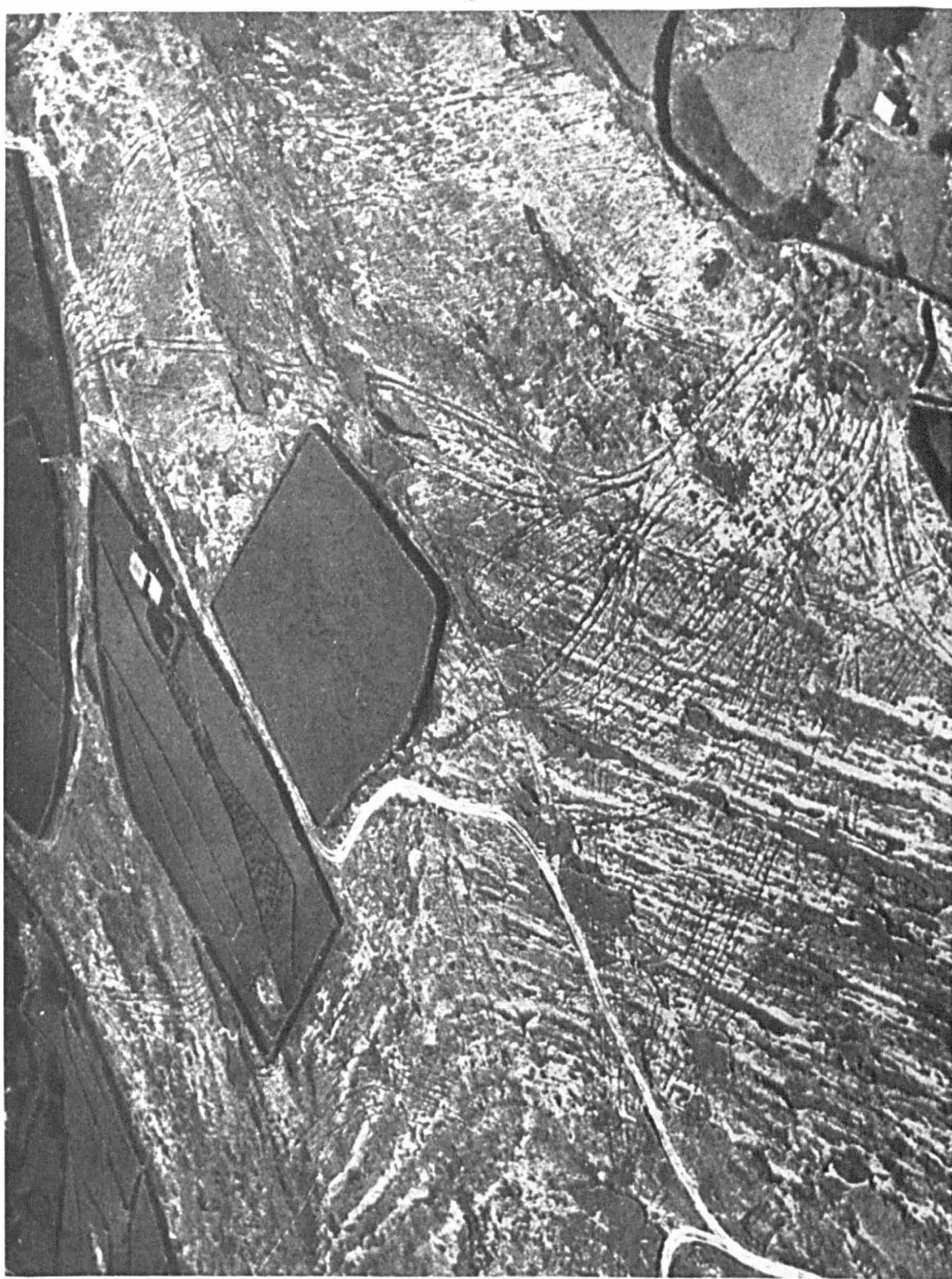
1. op. cit. 1961, p.260.

2. H.S.Gracie, 'The Ancient Cart-tracks of Malta,' Antiquity, vol.XXVIII, 1954, pp.91-98 and J.D.Evans, op.cit. 1959, pp.189-191.

3. In a communication to the Malta National Museum, Valletta.

Fig. 2:1 - An exposure of Upper Coralline limestone on the Rabat-Dingli Plateau. The Bronze Age 'cart-tracks' are exceptionally well exposed. Later field building is also well illustrated.

Source: Antiquity, 1928.



CART-TRACKS, MALTA; SEEN FROM THE AIR

Quite how radically the environment of the Island was altered by pre-historic peoples is difficult to say. Certainly the natural vegetation cover was removed but what of the soils? At what period was the soil cover eroded from the Coralline limestone to produce the great tracts of Karst (i.e. or, in Maltese, 'Xagħara'? Conditions which may have brought this about (i.e. certainly existed during part of the Bronze Age - over population, inter-village warfare etc. - but more than this we cannot say.

The small area of Malta makes it almost inevitable that the first group of people, to exploit the Island intensively, will strain and exhaust its resources. The Neolithic people seem to have avoided this as they were an exceptionally well organised society and free from wars. The presence of cart-tracks, cut in the Bronze Age, would seem to indicate that the Neolithic settlers left the soil cover largely intact.

Bronze Age Malta was not free from war and the societies which marked it were poorly organised in comparison with those which had gone before. Erosion, of at least part of the soil cover, may have taken place in the latter part of this period. Unfortunately we lack any positive evidence. Certainly the karst seems to have been in existence by Roman times for there are indications that bare hillsides were being rehabilitated then. But there is no definite evidence that the Xagħara existed prior to (i.e. this time.

Whilst we cannot be certain as to the period of time in which the soil cover was removed from the Coralline limestone, we can outline some of the effects of this change in environment. With the removal of the

natural vegetation and much of the soil Malta's original ecological balance was disrupted. The landscape had been planed down and any subsequent utilization of the Island by man required that he developed and maintained his own balances. Such balances were bound to be delicate. As Bowen-Jones has expressed it - "everything one sees in Malta, other than the major topographical features, is man-made and man-maintained For this reason there is an unstable equilibrium that eternally threatens to collapse."¹

The overall effect of this pre, or proto, historical planing has been to increase the Island's vulnerability. The man-made balances have frequently collapsed when the central Mediterranean has been racked by wars. The precarious foundations of local agriculture and the inherent tendency of the population to exceed local food production, have proved a powerful drag on the Island's strategic possibilities.

MALTA UNDER THE CARTHAGINIANS.

By ³1000 B.C. the Phoenicians were trading in the western basin of the Mediterranean and, within a short time, founding colonies. It is difficult to believe that Malta was not concerned at a very early stage in Phoenician trade and expansion. Phoenician artefacts which may date from the ninth century B.C. have been found² and in the eighth and seventh centuries B.C. the Island was colonised from Carthage. This event closed the Bronze Age in Malta.³ The first Carthaginian colony was probably a small trading

1. M.B.D, p. 349.

2. D.Harden, 'The Phoenicians,' 1962, p.40.

3. J.D.Evans, op. cit. 1959, p.188.

post situated near the head of the Grand Harbour. Possibly, at a later date, a settlement was established on the site of Mdina (there are several Punic cemeteries in the vicinity) and Gozo, too, appears not to have been unaffected.¹ However, no Phoenician town site has yet been identified on the Island.

In the eighth century B.C.² the Greeks started to trade with Sicily and southern Italy and eventually established colonies in the region. Although, in succeeding centuries, there was a clash of interests between Phoenicians and Greeks, which frequently led to war, there is some evidence of peaceful co-existence between the two parties in Malta. The central Mediterranean was being permeated at this time by European and Middle Eastern influences and Malta was firmly within the sphere of the latter. There were undoubtedly many importations from the Hellenic world, the proximity of Sicily made this inevitable, but the Island came to be strongly controlled by Carthage and Punic culture appears to have put down deep roots.

With the rise of Rome, and its conflict with Carthage, Malta came to lie at the peripheries of two expanding spheres of influence. During the first Punic war the Romans captured the Island, burning and pillaging it in the process.

During the conflicts between Phoenician and Greek and Roman and Carthaginian the Island acquired a value, not only as a port of call and trading post, but also as a military base. What little evidence we have

1. D.Harden, op. cit. 1962, p.40.

2. T.J.Dunbarbin, The Western Greeks, 1948, p.1.

suggests that Malta had become, at the time of the first Punic war, a Carthaginian naval base.

It is possible, from inference and the few literary sources we possess, to reconstruct at least something of the economic basis of Punic Malta. However, as few remains of this period can be recognised in the landscape today, such a reconstruction would be of little relevance. What has considerable significance to any study of the genesis of Malta's individuality, is the deep cultural imprint which the Punic occupation made.

The Romans acquired Malta permanently from Carthage in 218 B.C.¹ during the second Punic war. However, Diodorus Siculus,² writing a century and a half after the start of the Roman domination, gives this description of the Island. Malta "has artisans skilled in every manner of craft, the most important being those who weave linen, which is remarkably sheer and soft, and the dwellings on the island are worthy of note, being ambitiously constructed with cornices and finished in stucco with unusual workmanship. This Island is a colony planted by the Phoenicians, who as they extended their trade to the western ocean, found in it a place of safe retreat, since it was well supplied with harbours and lay out in the open sea; and this is the reason why the inhabitants of this Island, since they received assistance in many respects through the sea-merchants, shot up quickly in their manner of living and increased in renown. After this there is a second which bears the name of Gaulus (Gozo), a Phoenician colony".³

1. Livy, XXI, 51.

2. V, 12, 2.

3. Translation from J.Aquilina, Papers in Maltese Linguistics, Malta, 1961, p.44.

And another account,¹ describing the shipwreck of St. Paul at Malta in 60 A.D., refers to the inhabitants of the Island as 'Barbaroi', i.e. they spoke neither Latin or Greek. It has been suggested² that the Maltese of the day spoke a dialect of Phoenician.

Pottery styles, too, continued to exhibit a strong Punic flavour long after Carthage had been destroyed. Whilst Thomas Ashby³ summing his account of Malta under the Romans says it is doubtful if the inhabitants ever became thoroughly Romanized.

This Middle Eastern influence, 'out of North Africa', is important for it has been suggested that the reason why Islamic culture rooted so deeply in Malta, towards the end of the first millenium A.D., was that there already existed a sympathetic Punic cultural substratum. We shall return to this later.

ROMAN MALTA.

During the Roman occupation (218 B.C. to the middle of the fifth century A.D.) some of the more important features of the human imprint on the landscape of Malta began to harden. Whether or not this was simply an emphasising of a pre-existing pattern is difficult to say. In any case during this period two paramount elements in Maltese life, for the next 1,500 years, take definite form - the centrally placed capital and the harbour side trading settlement.

1. Acts XXVIII, 7.
2. J.Aquilina, op. cit. 1961, p.8 and D.Harden, op. cit. 1962, p.115.
3. 'Roman Malta,' The Journal of Roman Studies, 1915, p.75.

There can be little doubt that Malta became very prosperous under Roman rule. Cicero in an impeachment of the rapacious Verres - a Governor of Sicily who misused his authority to plunder the territory under his guardianship - gives a list of his misdeeds. Included in this inventory are a number of products alleged to have been taken from Malta and it appears that the Island was producing a number of luxury goods for export besides textiles.

Extensive harbour works were developed around the inlet which is called Grand Harbour today. The innermost creeks, extending into the Marsa (M.R. 5470) were protected by a mole and the remains of quays and warehouses have been found.¹ At this time the sea flowed further into the Marsa but silting took place at a later date. The effects of this infilling have been lessened, to some extent, by a rise in sea-level since Roman times.² The large amount of Roman masonry in the area suggests a fairly extensive development of harbour facilities and it is difficult to believe that a settlement did not exist here as well. Detailed archaeological investigations have not, as yet, been made.

No such doubts surround the Roman capital of Malta which stood on the site now occupied by Mdina (M.R.4671). In Roman times the Island and the capital city bore the same name - Melita. Melita, the city, was some three times larger than the present day Mdina and was separated from the Rabat-Dingli plateau by a ditch twelve feet deep and eighty two feet wide. St.

1. Thomas Ashby, op. cit. 1915.

2. J.B.Ward Perkins, 'Problems of Maltese History,' Antiquity, vol. 16, 1942, p.19.

Paul's Church in Rabat stands on the line of this ditch.¹ Abela,² writing in the first half of the seventeenth century, mentions that the streets of Rabat were still littered with the remains of Roman buildings. A fact which testifies to the prosperity of Malta under Rome in comparison with the following centuries.

(i.e.) The capital and the harbour were probably linked by a road. This may have been the 'Strada Antica' which was still recognised and used in the mid-seventeenth century.³

Phoenician and Greek influences earlier in history would, very probably, have resulted in an increase in arboriculture. There is direct evidence of this activity during the Roman period and oil presses and storage vats have been found at several villa sites. Braun⁴ has suggested that Roman farmhouses may have influenced the design of some local buildings.

Little more remains of Roman Malta than the relics of a few villas, baths, harbour works and temples. But the major patterns of the human geography of Malta under the Romans are, in many cases, perpetuated in the landscape today.

BARBARIANS AND BYZANTINES.

By the fifth century A.D. Roman power had declined so much that the Vandals were able to set up a kingdom in North Africa. They quickly developed a strong navy and, by the middle of the century were raiding Malta

1. Ibid. p.30.

2. G.F.Abela, Descrizione di Malta, Malta, 1647.

3. Treas. B. 289, ff.19-20.

4. H.Braun, An Introduction to Maltese Architecture, Malta, 1944, p.5.

and Sicily. Whether or not they garrisoned or colonised either Island is uncertain. During the sixth century the Byzantines were able to establish control over Sicily and apparently Malta as well. There is no concrete trace of the Vandals in the landscape and the Byzantine contribution was extremely limited, although excavation may reveal more.

THE ARAB DOMINATION 870 - 1090 A.D.

The Arabs took Malta from the Byzantines in 870 A.D. and the Island was once again drawn out of the European world but into another which was considerably more advanced. The Arabs controlled North Africa and Sicily so that Malta, strategically, was of limited value^{to them}, but in security the Island became quietly prosperous. Several Arab chroniclers make mention of the Island at this time and indicate its prosperity.

"Malitah,¹ (Melita the Latin name for the Island) Island near Sicily, rich in everything that is good, and in the blessing of God ... well peopled, possessing towns and villages, trees and fruit." Another draws a similar picture. "Malstal possesses a secure harbour to the east, it abounds in sheep, honey and fruits." Both accounts suggest that the Island possessed a considerable number of cultivated trees and this is in contrast to many later descriptions, particularly those of the sixteenth century, which frequently comment that the Island was "without trees of any sort". Place name evidence suggests (Fig. 4:1) that there were a considerable number of olive groves at this time and there

1. Quoted by A.A. Caruana, El-Gherien Tal-Leibru, Malta, A Hypogeum. Malta, 1884. del.

is documentary evidence of the planting of olives by the Arab overlords.

Undoubtedly the Arabs introduced or re-emphasised a number of crops, especially cotton, which came in succeeding years to occupy a central place in rural life, and citrus fruits. They also introduced new agricultural techniques. "Coming from an even drier land, they knew well the value of water" and it was probably at this time that many of the irrigation methods now used in Malta were first introduced. Irrigation had been practised on the Island previously, but the Arabs had more sophisticated techniques of water exploitation, application and usage. It was they who introduced the 'Noria' (called 'Senġja' in Maltese). Once a device such as this is being used, replacing the man-handling of buckets, with its ability to feed water onto the land at faster rates over a larger area, then the whole system and layout of irrigated farms has to be altered and extended to exploit it.

Under the Arabs there was a resurgence of urban life which had been in decline since the end of the Roman domination. The old Roman capital was remodelled, refortified and renamed - Mdina - the city. The Arabs are also thought to have been the first to fortify the site now occupied by Fort St. Angelo (M.R.5672) and they probably exploited the nearby creek for commercial shipping. Numerous trading links were developed and Sicily, particularly Palermo, became an important market and point of contact between western and Arab cultures. At the same time organised piracy started to make a contribution to the economy.

There is no doubt that the Arabs made a huge cultural impression upon Malta. Probably there was an influx of Arab settlers and Christians came to be in the minority. Whether this was due to Arab settlement or Christian defections to avoid taxes or both is impossible to say. Arabic was adopted as the Island's language and since this time it has evolved into a separate language, Maltese, by contact with the Western world and the acquisition of a Romance superstructure.¹

The change of language which took place under the Arabs has given us a datum for Maltese place-name evidence. It is unlikely that place-names describing transitory objects would survive such an upheaval in any great numbers and widely distributed names, indicative of woodland, crops etc. probably have their origin at some time after the Arab conquest.

Arab influence was not eradicated with the Christian Reconquest (1090 A.D.) for it was not until the thirteenth century that the Moslems were expelled and many no doubt turned Christian rather than go.

Thus there are a number of recurrent themes in Maltese history which appear to spring from basic geographic factors - position, size and natural resources. The need for the Island to supplement its own wealth from external sources, the tendency for any successful exploitation to outrun agricultural productivity, the periodic breakdown of balances in response to unsettled times and the movement between European and Middle Eastern spheres of influence, all find their source in these basic factors.

1. J.Aquilina, op. cit. 1961, p.42.

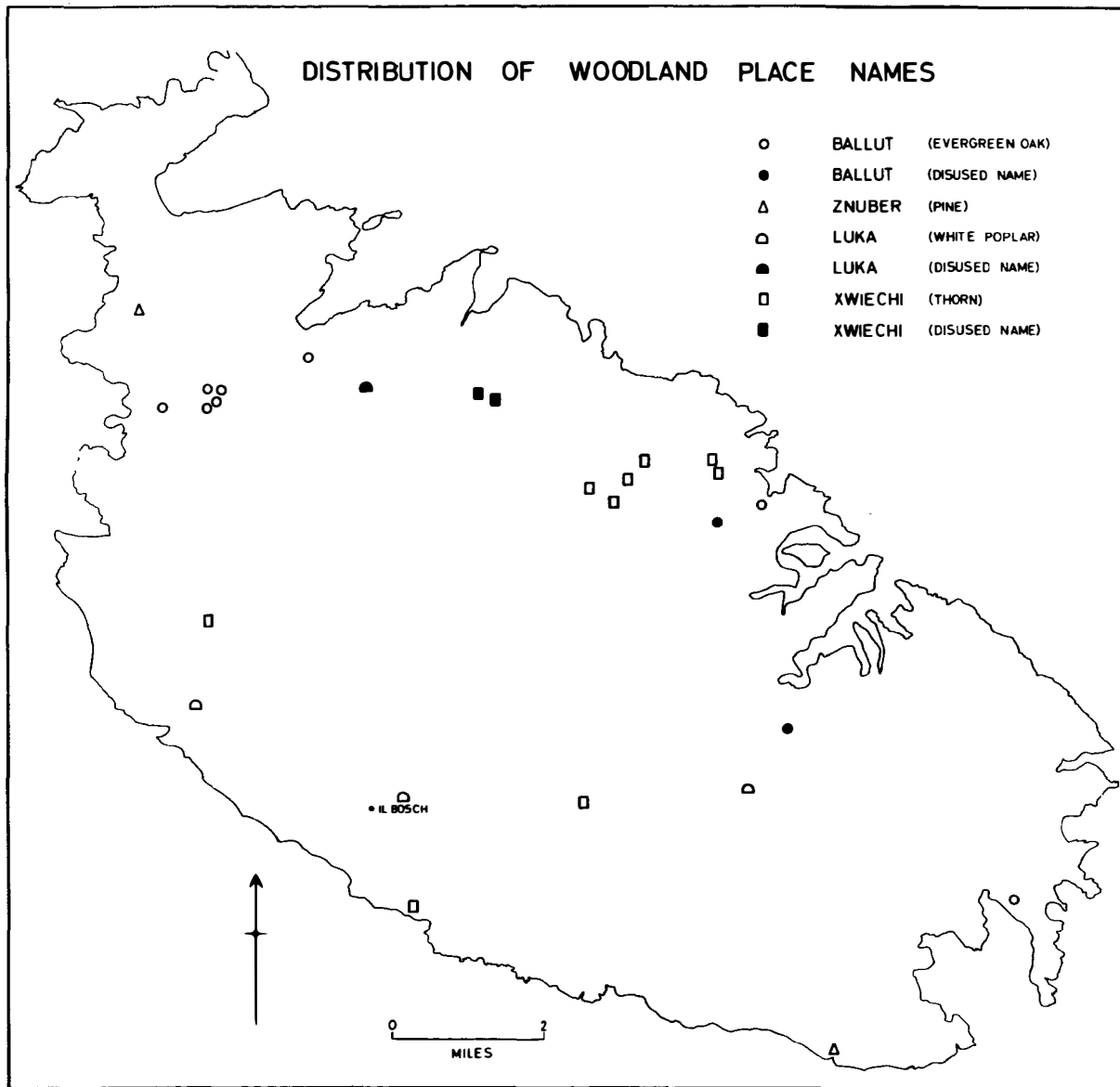
Fig. 2:2 The distribution of place-names indicative
of a former tree cover.

The existence of these names may indicate
tracts of woodland at some time
between the tenth and thirteenth centuries.

Sources: The six inches to one mile map
of Malta and various documents.

DISTRIBUTION OF WOODLAND PLACE NAMES

- BALLUT (EVERGREEN OAK)
- BALLUT (DISUSED NAME)
- △ ZNUBER (PINE)
- ◻ LUKA (WHITE POPLAR)
- ◼ LUKA (DISUSED NAME)
- ◻ XWIECHI (THORN)
- ◼ XWIECHI (DISUSED NAME)



By 1090 A.D. the interaction of environment and events during the preceding four thousand years had already shaped many facets of Maltese life. Any future influences were bound to be modified by what had gone before.

THE CHRISTIAN RE-CONQUEST AND THE LATER MIDDLE AGES.

At the beginning of the eleventh century the lands which were to become the kingdom of the Two Sicilies were shared by many peoples and overlords. The Moslems controlled Malta and Sicily whilst the southern part of the Italian mainland was divided between the Byzantines, Lombards and a group of maritime republics including Naples and Amalfi.

The Normans were invited into the area to fight as mercenaries for the Lombards' cause, but they soon became the most powerful group in the region and by 1071, under the leadership of Robert Hauteville, they controlled Apulia, Reggio and the surrounding territory. In 1061 Robert's brother Roger had started upon the conquest of Sicily and in 1090 he took Malta from the Moslems, with neither bloodshed nor damage.

Malta was once more under European domination although, at first, the effects of this were not very great. Butler¹ has suggested that whilst the Christian lot was eased the Arabs continued to control the Island but paid tribute to the Norman overlords.

The various lands controlled by the Normans were fused into a kingdom when, in 1130 A.D., the son of Count Roger became King Roger of Sicily,

1. Professor Lionel Butler of the Department of Medieval History, St. Andrews, in a personal communication.

Apulia and Calabria. The lands and peoples of Roger's kingdom were extremely diverse and, with great tolerance and administrative skill they were brought to unity, at the same time, preserving "The local rights and customs of the several distinct elements in the population, Latin, Greek, Hebrew and Saracen".¹ The court of the 'baptised Sultan' i.e. embodied the strengths and talents of his variegated kingdom. The administrative system employed Byzantine and Saracen techniques and administrators, besides those imported by the feudal lords. The 'Duana', i.e. which controlled much of the kingdom's finances, pre-dated the Norman occupation and was Arab in origin.² The 'Catapans,' responsible for a large part of local administration, were Byzantine in origin. The office, with somewhat altered functions, existed in Malta for centuries afterwards.

During the early years of Norman rule Malta was, probably, only loosely attached to their lands but, as King Roger started to reorganise the Sicilian kingdom, this rapidly changed. The evidence we have suggests that between 1130 and 1266 A.D. (a date which marks the demise of the Hohenstaufen dynasty) the prosperity which Malta had enjoyed under the Arabs was incremented under the Normans. Count Roger had employed few vassals to help him conquer Sicily and he was able to retain most of the new provinces. The administrative ability of King Roger was put to exploiting and increasing the wealth of these lands. He also exploited the maritime position of the Island³ which in an age of coastal navigation,

1. C.H.Haskins, The Normans in European History, 1915, p.225.
2. C.H.Haskins, 'England and Sicily in the Twelfth Century,' "English Historical Review," vol. XXXVI, 1911, p.652.
3. F.Chalandon, 'The Norman Kingdom of Sicily,' Cambridge Medieval History, vol. V, 1926, p.184.

was well suited to controlling the Mediterranean sea routes. Roger built up a powerful navy and merchant fleet and when, by 1153, he had control of the North African coast from Tunis to Tripoli the King had the Mediterranean "by the throat". The trade of Sicily developed until Roger's "income from Palermo alone was said to be greater than that which the King of England derived from his whole kingdom."¹ Malta shared in this prosperity and Edrisi, writing during the reign of Roger, describes the Island as follows:-

" Malta is a large island with a good harbour opening to the East. Malta has a city. The island abounds with pastures, flocks, fruit and above all honey." ² Apart from this account by Edrisi we have little knowledge of the events occupying the remaining years of the twelfth century in Malta. The economy was, however, so closely linked with Sicily that it had, perforce, to follow a similar track - prosperity under the three great Norman Kings; Roger, William the Bad, and William the Good, followed by a thirty year decline, until Frederick II was able to take control of the Kingdom. During this period of recession Sicilian trade degenerated to such an extent "that the country which had once been so prosperous was now on the verge of bankruptcy".³

Like King Roger, Frederick gave geographical and political unity to the heterogeneous regions and peoples which comprised the Two Sicilies.

1. C.H.Haskins, op. cit. 1915, p.233.
2. M.Amari, Biblioteca Arabo-Sicula, vol.1, Turin & Rome, 1880, p.53. The wording of this description is similar to that used by one of the previously quoted Arab writers.
3. G.Masson, Frederick II of Hohenstaufen, 1957, p.85.

Frederick had boundless Imperial ambitions and Sicily became the treasury which financed them. The island was fabulously wealthy and the Emperor organised its development and exploitation to the full. Malta shared in this. Like Sicily the island had been conquered with little assistance from feudal nobles and few of its lands, as far as we know, were given out in fiefs. Once Frederick had regained financial control of the Royal estates, some of them had been mortgaged, Malta became closely linked with the Sicilian crown. Frederick's possessions on Malta were extensive and formed a substantial part of the Royal estates. This was particularly important for Frederick gave great encouragement to agriculture and was constantly attempting to raise the productivity of his own lands.

The Emperor's activities in southern Italy and Sicily have been described thus - "he forbade the seizure of oxen and implements for debt; he created model farms; he exterminated injurious animals; he fostered the cultivation of cotton and sugar cane; and the plantation of the date-palm; he sought to acclimatise the indigo plant; he allowed the clearing of the demesne-forest for vineyards".¹

With specific regard to Malta, Butler has analysed contemporary letters which show Frederick taking an interest in cattle raising, pigs, and enforced labour on his lands. Whilst he also encouraged falcon breeding and planned the establishment of a camel breeding station on Malta.²

Like his grandfather, King Roger, Frederick developed a navy and merchant fleet. During the unsettled years which preceded Frederick's

1. Michalangelo Shipa, 'Italy and Sicily under Frederick II', Cambridge Medieval History, vol. VI, 1929, p.150.

2. M. Amari, Storia del Musulmani di Sicilia, vol. III, pt.11, 1939, p.817.

re-organisation of the Kingdom, two great maritime powers of the day - Pisa and Genoa - gained considerable influence in Sicily for it was an important link in a chain of bases leading to the Levant. "In Sicily they enjoyed almost identical privileges; each had a special quarter in all important harbours, a consulate, a warehouse - the 'Fondaco' taken over from the Arabs - and the enjoyment of free trade which exonerated their merchants from the payment of taxes, dues and duties".¹ Syracuse was almost completely controlled by Genoa whilst Malta, too, became an important Genoese trading station.² During Frederick's minority, when he was almost penniless in Palermo, Malta had been sold to Henrico Pescatore, a Genoese, who used the island as a pirate base against Moslems and Greeks.³ He was expelled shortly after 1223.

By their domination of trade and avoidance of dues the maritime states were draining the Sicilian Kingdom of its wealth. Frederick cancelled many of their privileges and set about exploiting trade for himself and his state. Warehouses were built and all exports and imports had to pass through these to pay dues and duties. As Frederick's merchant fleet developed he was soon able to create certain virtual Royal Monopolies. In 1224 the export of grains, other foodstuffs and cattle was forbidden.⁴ Frederick went on to make large sums in Sicily's profitable grain trade which he now controlled.

1. E.Kantorowicz, Frederick II, English edition, 1931, p.122.
2. R.Valentini, 'Feudo e Comune in Malta,' A.S.M., 1935.
3. Butler, op. cit.
4. E.Kantorowicz, op. cit. 1931, p.126.

Industry, too, was developed and the Royal Monopolies here, many of which were Byzantine and Norman in origin, were extended until they included salt, iron, steel, silk, slaughter houses and money changing.

By the end of Frederick's reign Sicily was probably the richest region in Europe. This wealth was based on an administration far ahead of anything else in Europe at the time, the natural riches of the Kingdom, particularly the great grain production and the positional advantages of Sicily. Butler has argued that Malta, too, was highly developed economically. It was not to last. When in 1250 A.D. the Emperor died excommunicate, the Pope brought down Charles of Anjou to exterminate what remained of the Hohenstaufen's - "the race of vipers". Within a few years the Empire fell apart, and ^{the} Sicily, ^{the} after a term of oppressive government, rose against the Angevins in 1282 and drove them from the Island.¹ During this period Malta was sacked at least once.²

The house of Aragon became the overlords of Sicily and within a few decades Frederick's European Empire had disintegrated and Malta had come to lie, not within a few miles of a wealthy kingdom at the heart of an Empire, but on the borderlands of a divided and distracted Europe. To the Aragonese the Sicilian Kingdom was just another possession, not the centre of their existence.

1. S.Runciman, The Sicilian Vespers, 1958.
2. R.Valentini, 'Universita Melivetata,' (Quoting Finka, "Acta Aragon-
esia",) A.S.M, Rome, 1935, p.41.

ETHNIC AND CULTURAL CHANGES DURING THE MIDDLE AGES.

The isolating of Malta was not the only result of the Aragonese domination of the area for as the Island's strong links with Europe were loosened the processes of Latinisation, which had begun with the Norman Conquest, were slowed. Under the Normans Malta's Moslem community, provided it remained loyal and paid the taxes imposed upon it, was allowed to retain the dominant position in society. The Normans never attempted an "impossible Normanisation" of the Kingdom, they brought administrative, legal and economic re-organisation but their numbers were few. Probably there was only a very small influx of Europeans into Malta at this time. The trading interests developed by the Genoese, in the latter part of the twelfth century, may have led to a colony of Europeans being established near the Grand Harbour, particularly after the Genoese got administrative control of the Island for a time. But such people were essentially rulers and administrators and probably had little effect on the population as a whole. Much the same can be said of the administrators introduced by Frederick II.

In 1221 A.D. one of Frederick's vassals was obliged to raze the rebellious town of Celano. The population was transported to Sicily to farm lands formerly worked by Moslems. These last had not taken the Imperial yoke with ease and had been removed to Apulia and settled on vacant territory. In 1224 A.D. a number of the inhabitants of Celano were brought to Malta and settled.¹ We neither know how many came nor how many left again to

1. M. Amari, op. cit. 1939, p. 617.

people the new town built to replace Celano - ^{Ca}Cesarea. The fact of their coming may indicate that the Island was not overpopulated at the time and possessed vacant lands but equally it may not. In any case an Italianate section was added to the community - at least for a while.

When the Bishop of Strasbourg visited Malta in 1175 A.D. he recorded that the Island was inhabited by Moslems.¹ And in 1240 A.D. the Emperor Frederick sent the Abbot Ghiliberto to the Island to assess the population for tax purposes and the survey showed, not only that the Moslems probably outnumbered the Christians, but also that they held most of the wealth. The Abbot added that the Maltese had different customs from the Sicilians. In 1249 A.D. Frederick expelled the Moslem population from Malta but how many changed their religion rather than leave is unknown. Those who went left behind their language and a society dominated by their influence and outlook. Malta probably remained essentially North African.

From the beginning of the twelfth century trading contacts with European ports strengthened. This was a two-way affair with Catalan, Venetian, Genoese and other ships calling at the Island and Maltese boats sailing out to trade. These contacts, which included North African ports as well, were limited to a very small section of Maltese society and probably affected, culturally, no more than the few people living around the Grand Harbour.

Later, when a Maltese nobility was created by the Aragonese overlords, this was definitely Italianate in character, and the influence of Sicily

1. Ibid. pp.545-547.

was projected into the sphere surrounding the Island's aristocracy. Again in terms of the whole population such contacts were limited, whilst the villages and countryside remained, in most respects, little affected by European influence.

d21(- Butler has analysed Maltese surnames of the later Middle Ages and has shown that apart from the noble families, humbler settlers from Europe arrived as well. However, two lists of inhabitants compiled in c.1500 A.D. show clearly that there was still a pre^cdominance of the older Maltese stock at that time.

It was the changes resulting from the Order of St. John's rule that altered Malta's closed, traditional society, gave it new opportunities and a changed outlook. The inward looking medieval society started to evolve rapidly once the Order arrived and began to build a group of new towns and fortifications around the harbours. The traditional agricultural society, which had formed the bulk of Malta's population, was outgrown by the new classes which grew up in the area surrounding the harbours. Here the Maltese acquired new occupations and were subjected to new influences, they lived in planned Italianate towns where commercial success demanded a command of Italian, Spanish and French.

Almost certainly by the time the Order left Malta the Maltese who lived in the new towns were largely European in outlook and thought of themselves as such. When Sandys¹ visited the Island in the latter part

1. Sandys' Travels, London, 1670, p.183.

of the seventeenth century, he described the town dwellers as "Frenchified". Whilst this is probably not quite accurate clearly the Maltese living in the urban areas did not strike the traveller as North African.

During the latter part of the Middle Ages, then, European influence was not strong enough to bring about any radical cultural changes except in a small section of society. However, this is not to say that the organisation of society did not evolve. In fact a well marked local administration developed during this period. The origins of this government are obscure¹ but by the beginning of the fifteenth century there existed a quite highly organised administration, which enjoyed a fair degree of independence within the Sicilian Kingdom. In many ways this government operated along democratic lines. The head of the Univeristà, or governing body, was appointed by the Viceroy of Sicily but under him came four elected Jurats. The Jurats in effect ran the Island. They arranged for the necessary supplies of wheat to be brought from Sicily, maintained the Island's defences, treasury, harbours and organised the small local parliament - the 'Consiglio Popolare'. The seat of government was Mdina. Gozo, too, had a 'Università' which was independent of the one existing on Malta.² During this period, too, the Roman Catholic Church strengthened its organisation in Malta particularly after the establishment of Religious Orders on the Island.

1. R.Valentini, 'Feudo e comune in Malta,' A.S.M, Rome, 1935.

2. E.R.Leopardi, 'The Island of Gozo (1432-1530),' M.H, vol.3, 1962.p.78.

THE DECLINE OF MALTA'S PROSPERITY DURING THE LATER MIDDLE AGES.

The disintegration of authority in the central Mediterranean, consequent upon the collapse of Frederick's Empire, had massive social and economic repercussions on Malta. The next three hundred years were to bring upon the Island, which appears so prosperous in the thirteenth century, plague, drought, depredation, depopulation and poverty. The prosperity built up under the Arabs, Normans and Hohenstaufens was wasted. An island "rich in everything that is good, and in the blessing of God" and abounding "in sheep, honey and fruits" became, by the early sixteenth century, "merely a rock barely covered with more than three or four feet of earth, which was likewise stony, and very unfit to grow corn and other grain", the inhabitants "were poor and miserable, owing to the barrenness of the soil and the frequent descents of corsairs in a word a residence in Malta appeared disagreeable indeed, almost insupportable".¹ The causes of this economic and social depression are complex and spring from the political changes which took place in the Mediterranean world after 1250 A.D., the inherent lack of resources of the Maltese archipelago and the Island's peculiar state of delicate balance "which eternally threatens to collapse".

There is no need for us to analyse the political changes suffice it to say that as a result of instability piracy became an important occupation in the region and Malta became a base for corsairs working the central Mediterranean. Malta lacks sufficient resources to replace the wastage that

1. Louis de Boisgelin, Ancient and Modern Malta, vol. II, 1805, pp.15-18.

this type of activity involves and by the early fifteenth century, the documentary evidence shows that the resources of the Island were exhausted and large areas of land abandoned.

Valentini¹ has suggested that the final breakdown was caused by the attempts of Aragon, early in the fifteenth century, to expand its territory. This alienated various surrounding peoples and precipitated attacks on Malta. In 1429 A.D. the Moors launched a big reprisal attack on the Island (it is claimed that 18,000 men took part) and a series of smaller raids followed. Agriculturally this was disastrous and the years between 1434 and 1439 A.D. were reported to be totally sterile.² A state of war existed until 1457 A.D. by which time the Island was near bankruptcy and viticulture had been virtually eradicated.³

Other forces, besides the ambitions of Aragon, had helped to bring this about. There were numerous pirates operating in the waters around Malta - Genoese, Calabrians, Greeks, Turks and Arabs and they, too, were liable to put in the occasional raid on the Island. By the end of the fifteenth century corsairs based on the Barbary coast had developed into a considerable nuisance. What is more, the crewing of pirate boats at Malta with Maltese seamen helped to diminish the population for many never returned. In 1429 A.D. the crewing of 'Fuste' (armed boats for piracy) at Malta had to be forbidden.⁴

1. 'L'Espansionismo aragonese nel Mediterraneo come cause della decadenza di Malta,' A.S.M., Rome, 1941.
2. Ibid. p.112.
3. Ibid. p.110.
4. R.M.L. 860, F.54. l.c.

The records of the 'Università display a harsh picture of life in the later part of the fifteenth century. Clearly the administrators of the day saw their troubles as stemming from the great raid of 1429 and they were forced to send out, over a period of years, a number of appeals in an attempt to get aid from the Island's overlords. The content of these appeals give a great deal of detail on the condition of the Island.

The inhabitants describe themselves as living on "a rock in the middle of the sea far from help and comfort".¹ The journey to Sicily had been made precarious by the activities of corsairs and the population lived in fear of plague, drought² and invasion. The two strongholds - the Castello (today Fort St. Angelo) and Mdina - had become tumble-down and impotent, the latter being only partially occupied. In 1455 half the houses were empty.³

Villages were declining and the delicate balances which maintained much of the agricultural land were collapsing. The Island became more and more dependent on imports of Sicilian foodstuffs but at the same time it was becoming harder for ships to move between the two islands.

1. R.M.L. 9, F.108.
2. E.R.Leopardi, 'Bandi of the XV Century,'
M.H, vol.2, No. 4, Malta, 1959, p.255.
3. R.M.L. 3, F.9.

Inevitably in such conditions trade, urban life and agriculture were in rapid decline. Nor was there any amelioration during the sixteenth century, raids were no less common and in 1525 some four hundred Maltese were removed in the course of a single incursion. Many Maltese, with the means, removed to Sicily. Certainly "a residence in Malta appeared disagreeable" and it seemed that the alternatives facing the Island were either depopulation or a future as a corsair lair under the Moslems.

But the strategic geography of Europe was altering. The Turks were threatening the Habsburg possessions in the central Mediterranean and thereby transforming the region from a European borderland to an important frontier zone, involved in the containing of an Islamic thrust into Europe. This same thrust had dislodged the Order to St. John from Rhodes and pushed it into the western Mediterranean in search of a new base. Charles Vth was able to offer Malta for this purpose and thus make manpower and capital available for the exploitation of the Island's strategic assets.

The Middle Ages had been chequered for Malta. Having been reclaimed by Europe in the eleventh century the Island had become, by the beginning of the thirteenth century, a prosperous appendage of the most prosperous kingdom in Europe, subsequently it slumped to become an impoverished, partially abandoned out-post and, at the beginning of the modern age, was once more at the start of another period of rapid economic growth.

Important cultural changes had taken place as well. The Island had emerged from the Arab domination with a predominantly North African flavour and just at the time when it appeared to be at the start of a long period of intense European influence the whole political structure of the central Mediterranean changed, leaving Malta in a peripheral position. However, a number of European institutions were imported and the 'Università and Church evolved to take a central place in Maltese life. The community developed individuality and independence. When the Order of St. John arrived the Island had a well marked character of its own which was strong enough to ensure that the majority of the Knight's creations had a Maltese flavour.

CHAPTER III

The Crusading Order of St. John of Jerusalem.

In 1113 A.D. a group of men who ran a hospital in the Holy Land for pilgrims visiting Jerusalem, were banded into the religious Order of St. John of Jerusalem. Within a few years it became military in character and the other Orders, of a similar type, were founded to act as permanent garrisons in the Holy Land and consolidate the gains of the crusades.

At the end of the thirteenth century the crusaders were driven out of Palestine by the Saracens. At first the Order of St. John went to Cyprus but, in 1308, the Knights moved on to Rhodes, where they remained until 1522.

Members of the Order were drawn exclusively from noble European families although something less than full membership was open to men lacking the highest qualifications of birth. The Order was financed, principally, by revenues drawn from European properties which had been bestowed upon it by monarchs and noblemen when crusading zeal was high. The statutes of the Religion (the Order of St. John was frequently referred to as the Religion) ensured that it became increasingly rich as, on death, nearly all the property of a Knight was automatically inherited by the Order.

The head of the Order was the Grand Master and beneath him the members were grouped into a series of Langues, depending on their place of birth. Knights lived in, or had facilities in, the auberge of their Langue.

In 1522 the Turks drove the Order out of Rhodes and it migrated into the western basin of the Mediterranean. It might be thought that with

Europe living in constant fear of the Ottoman Empire, Turkish land campaigns had brought them close to Vienna by this time, the Order would be quickly provided with a new base for operations. Unfortunately the political rivalry which existed between the Valois and the Habsburgs prevented this and it was eight years before the Order was granted Malta by Charles Vth.

Malta was far from ideal, being completely undeveloped as a base for modern warfare. However, after eight years during which operations were largely suspended the Order, if it were not to become ineffectual, required a base of some form. The Grand Master of the day, Villiers de L'Isle - Adam, accepted Malta largely in the hope that he would be able to secure something more suited to the Religion's needs in a short time. Many members of the Order hoped it would be possible to recapture Rhodes.

Before the Order accepted Malta a commission was sent out to report on the proposed new base. Unfortunately the original copy of the document the commissioners drew up is no longer to be found in the archives of the Order but Giacomo Bosio,¹ who wrote a history of the Order to 1571 from official sources, included a summary of the document in his book. A shorter summary also appears in Louis de Boisgelin's 'Ancient and Modern Malta,'² Other sources corroborate the report and there is no reason to doubt its accuracy. The deficiencies of Malta, from a military point of view, are very clear from

1. Giacomo Bosio, Dell' Istoria della Sacra Religione et Illma. Militia di San Giovanni Gierosolimitano, vol. III, Roma, 1602, pp.30-31.
2. vol. II, London, 1805, pp.15-17.

the commissioners' account. They describe the paucity of locally grown food supplies, the exposure of the Island to corsair raids, the poor quality, in a military sense, of the local population and the lack of fortifications. The amount of capital required to erect the necessary defence works was great and this was at a time when the Order had just lost considerable income producing properties in Rhodes. The incomes, which came from the newly acquired crown lands of Malta, were very small in comparison.

The new base involved a greater degree of dependence upon Europe - particularly Sicily and its Spanish overlords. To an Order which valued independence highly and whose neutrality towards other European powers was imperative, the new situation had many prospective flaws. The French element within the Order was dominant and this was to be a fruitful source of distrust between the Sicilian Viceroys' and the Order.

Whilst perhaps less isolated than Rhodes the position of Malta was very exposed. Added to the continued Turkish threat, corsairs, based on the Barbary coast, were a danger to the sea communications between Malta and Sicily. The corsairs were rapidly assuming another rôle besides piracy, as they linked up with Turkish efforts to break into the western Mediterranean. Dragut Reis and his corsair galleys took part in both the heavy Turkish attacks on Malta in 1551 and 1565.

THE GREAT SIEGE OF 1565.

The early years of the Order's rule in Malta were not easy, either for the Knights or the Maltese. The Order were able to repulse attacks on the Island by corsairs but in return they brought the threat of the Turks and total war. The Turks were trying to force their way into the

western Mediterranean and Malta, as the base of the Order, was bound to be involved in the efforts to prevent this. Indeed the Turks could not leave the Order free to operate behind their lines. In 1551 Tripoli, which had been granted to the Order with Malta was lost and, in the same year, a strong Turkish force attacked the Island and carried thousands of the inhabitants of Gozo away into slavery.

On coming to Malta, in 1530, the Order had inherited several fortified positions; the citadel in the centre of Gozo, Mdina and the 'Castello a mare' (Fort St. Angelo) lying next to the Grand Harbour. All were weak and unsuited to resisting the new techniques of siege warfare.

The defence of the Island had obviously to be concentrated around the Grand Harbour, for the Turks could hold all of Malta but this and still not control the Island. There could be no question of using Mdina as the principal fortress and this was the major flaw in the old strongholds capital make-up. The Order could have been contained there and forgotten, whilst the Turks launched an attack upon Sicily.

On the 18th May 1565 a Turkish armada of nearly two hundred ships appeared off Malta and within a short time an army amounting to 30-40,000 men was put ashore. The Siege of Malta is far too well known to bear recounting here.¹ What, however, is worth pointing out are some of the consequences stemming from the battle and the victory.

1. A good account can be found in Giacomo Bosio, op. cit. 1602 and, more conveniently, in W.H.Prescott, History of the Reign of Philip II, 1860, or Francesco Balbi de Correggio, The Siege of Malta, Copenhagen, 1961.

Had the Turks conquered in 1565, or had the Order never been coerced into accepting Malta, allowing the Island to remain an undisturbed part of the Sicilian kingdom, it seems probable that, at best, Malta would have shared the economic stagnation of Sicily. At the worst the Island's population would have declined steadily, possibly leading to total abandonment. Another possibility is that Malta would have been taken over by the Barbary corsairs and used as an ancillary base. None of these things happened and instead the Island became the headquarters of a rich and powerful Order which had, relatively, huge amounts of capital available for investment in a poor and backward country. Throughout their rule the Knights spent large sums on buildings and fortifications, their military machine demanded and created a series of industries to equip and service it, whilst the high standard of living enjoyed by members of the Order gave work to many people. The whole economy of the Island responded to the stimulus provided by the Order's wants and spending.

Whilst all this is true there is no denying the havoc which the first few years of the Order's rule brought upon the Island. The Siege of Malta was the holocaustic climax to the long wasting of men and resources which had marked the late Middle Ages. "The Turks, when all their force and engines of war were landed, began to devastate hamlets and fields, to burn houses and ravage everything with fire and sword, so that for three days and nights they wretchedly destroyed nearly the whole Island".¹ And when this was done the Island was fought over for another four months.

1. Ioan. Antonii Viperani, De Bello Melitensi Historia, Perugia, 1567, f.8. A copy exists at S.J.G. with a translation by W.K.Bedford.

The effect of this on the landscape must have been disastrous - crops ruined, walls broken, villages looted and wasted. When the peasants returned to the land their numbers had been depleted, their houses wrecked, the livestock eaten, equipment and seed gone. The processes of land abandonment and decay of the Middle Ages had come to a climax - Malta was a ruin and a wilderness.

From this nadir in the Island's economic history it has been possible, using the archives of the Order and other sources, to trace the growth of population, changes in the rural settlement pattern, the establishment and growth of several new towns, the rehabilitation and development of agriculture, together with the expansion of trade and industry.

The Great Siege of 1565 was a turning point in the history of modern Malta. The Order and Europe became convinced of the Island's strategic worth and a new period of prosperity started, based on the monies which the harbours brought in as a military base.

CHAPTER IV

MALTESE AGRICULTURE PRIOR TO THE COMING OF THE ORDER.

By the beginning of the fifteenth century Maltese agriculture was far from being a simple subsistence system. It is certain that in the thirteenth century, if not long before, the Island was unable to produce sufficient food for the needs of its inhabitants. For instance, in 1283 the Università petitioned the King of Aragon for the confirmation of privileges granted by his predecessors to allow grain to be extracted, duty free, from Sicily.¹ One imagines that these privileges dated from the time of Frederick II who forbade the export of grain from Sicily, except through controlled dutiable channels, but made provision for Malta which lay within the kingdom.

The major agricultural deficiency was Malta's inability to produce sufficient grain and this was a factor both of the Island's limited area, in terms of the population, and the marginal quality of much of the land. This grain deficiency placed upon the economy a need to export in order to provide funds to pay for imported food. By the end of the fourteenth century Malta exported to Sicily and elsewhere, cotton,² cumin,³ aloe⁴ and beasts of burden. The Island imported grain, cheese, butter, oil, fats and pitch.⁵

1. A.Mifsud, 'L'approvvigionamento e l'Università di Malta nelle passate Dominazioni,' A.M., vol. III, 1918, p.170.
2. R.S.Lopez and P.Raymond, Medieval trade in the Mediterranean, 1955, p.109.
3. E.Rossi, 'Malta descritta da un pellegrino italiano nel 1394', Giorn di Polit. e Lett., 1934, p.697. Quoted by R.Valentini, 'Universitas Melivetata,' A.S.M., 1935, p.66.
4. W.Heyd, Histoire du Commerce du Levant, Leipzig, 1923. Quoted by Valentini, Ibid.
5. Valentini, Ibid.

In this form Maltese agriculture had successfully surmounted several economic problems by giving additional work for the population in processing and exporting whilst at the same time providing currency for imported foodstuffs. The crop structure outlined above had probably evolved well before the thirteenth century. Edrisi, writing at the time of Roger II (see chapter II) mentions the small island of Kemmuna (Comino), lying between Malta and Gozo. The name of the island is probably derived from cumin¹ and may be indicative of a widespread cultivation of the crop in the eleventh century. Maltese cotton was a well known item of European trade by the beginning of the fourteenth century.

In broad, then, the agricultural system which prevailed on Malta during the fifteenth century was as follows. The better grains, cotton and cumin were the crops of the higher quality dry farmed land.² Where irrigation water was available 'giardini' (small irrigated gardens) were developed, whilst on marginal land the hardier grains were sown. Karst-land, the 'xaghara' and 'moxa', served two principal functions; it provided rough grazing for cattle, pigs ("porcu di la xara"),³ sheep, goats, etc, and was also used for the collection of 'cardi' (probably thistles)⁴ which, in the absence of wood, served as fuel.

By the mid-fifteenth century agriculture was in decline, the area of arable land was decreasing in size and the delicate balances which

1. J.Aquilina, op. cit. 1961, p.214.

2. A.C. Ms. A. 247, 1439, published in A.S.M, 1937, p.478.

3. E.R.Leopardi, 'Bandi of the XVth Century,' M.H, vol.2. 1957, p.125. Quoting R.M.L. 958, f.255 v.

4. R.M.L. 854.

maintained much of the farmed land were breaking down. The primary cause of this disruption was the wars which occupied the early decades of the fifteenth century. It is recorded that after the Moorish raid of 1429 there were several years of total sterility.¹ As a state of war existed from 1429 to 1450 the export channels of Maltese agricultural produce may have been seriously disrupted for a time. Cotton production was resumed as were exports of the crop to Sicily.

Viticulture was not so fortunate and the area producing vines was greatly curtailed during the fifteenth century. The crop had probably always been difficult to produce profitably on the Island due to the proximity of the more efficient Sicilian producers. When the existing vineyards were disrupted, and many owners ruined financially, viticulture never really recovered in spite of a protective closing of the home market to imported wine for six months of the year.² Viticulture never entirely disappeared for in 1530 there is a reference to "mastri giardinari et dui de le vigne" but Malta was virtually without a wine industry throughout the rule of the Order.

It is surprising that the land-use patterns outlined above do not include the olive and there is no evidence to suggest that such trees existed in significant numbers during the fifteenth century. The

1. R.Valentini, 'L'Espansionismo, aragonese nel mediterraneo come causa della decadenza di Malta,' A.S.M, 1941, p.112.
2. R.Valentini, 'Documenti per servire alla storia di Malta (1432-1450),' A.S.M, 1937.
3. R.M.L. 740 and 153, f.45. Published by A.Mifsud, 'Nostri Consoli e le Arti ed i Mestieri,' A.M, 1917, p.41.

problem is further complicated as we know that Malta formerly bore a considerable number of olive groves. There are a large number of olive place-names still found on the Island, two of the oldest villages - Żejtun and Żebbuġ - bear such names¹ and this must indicate the former widespread cultivation of the plant (figure 4:1).

We have already argued (chapter II) that most Maltese place-names must post-date the Arab conquest. If a large number of olive place-names existed prior to the Arab domination it seems highly unlikely that many would be translated into Arabic unless olive trees actually existed. It seems probable, then, that Malta had a considerable number of olive groves at least as late as the tenth century A.D. Sometime between the tenth century and the beginning of the fifteenth century Malta's olive groves disappeared but it is impossible, at this stage, to give a precise date to this change of land-use. However, it is possible to suggest some of the forces which may have brought about the change.

By the twelfth century the Italian trading cities were making use of Malta (chapter II) not only as a transit port but also as a commodity source. Pegolotti's 'La Pratica della Mercatura' (1310-1340) at one point mentions cotton from six different sources - Syria, Byzantium, Apulia, Calabria, Sicily and Malta.² It would appear that by the early fourteenth century southern Italy, Sicily and Malta had come to form an important cotton producing region. Sicily and Malta were something

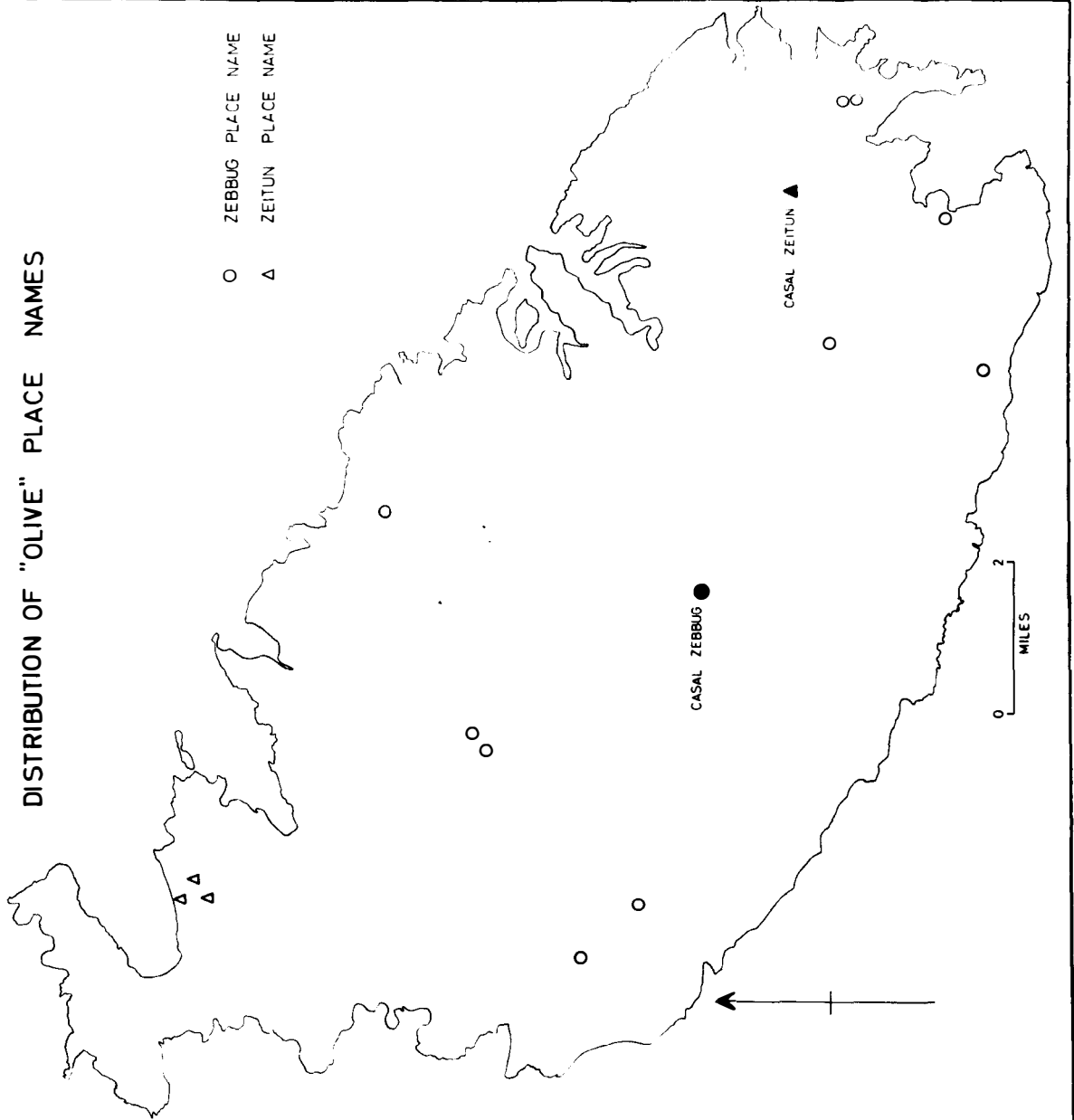
1. Both names mean "The village of olives". J.Aquilina, op. cit. 1961, p.234.
2. R.S.Lopez, and P.Raymond, op. cit. 1955, p.109.

Fig. 4:1 The distribution of place-names indicative
of a former cultivation of olive trees.

Source: Six inches to one mile map of Malta.

DISTRIBUTION OF "OLIVE" PLACE NAMES

O ZEBBUG PLACE NAME
Δ ZEITUN PLACE NAME



of a trading backwater until the eleventh century¹ so that prior to this date cotton production in Malta was probably on a limited scale. It would seem reasonable to postulate that during the twelfth and thirteenth centuries, with the rise of the Italian trading cities and the general increase in trade, that Maltese cotton production for export became increasingly important. Such a trend would result in the disrupting of traditional crop associations leaving behind numerous place-names as a legacy of former, more typically Mediterranean, land-use patterns.

A cottage industry developed around the production of cotton yarn and this became an established part of the Island's social and economic organisation, thus ensuring the continuation of the new crop patterns.

There is a tradition in Malta that olive trees disappeared as the demand for cotton increased. This tradition has been attached to the eighteenth century. However, a study of the Order's property books provides no evidence whatsoever to show that Malta carried more tree crops in the seventeenth and eighteenth centuries than it did in the nineteenth and twentieth centuries. Perhaps the eighteenth century dating for the demise of olive growing is simply a product of more recent theorists and the tradition recalls a much earlier event?

1. R.S.Lopez, Cambridge Economic History, vol. II, 1952, p.288.

MALTESE AGRICULTURE UNDER THE ORDER.

When the Knights accepted Malta they were fully aware that their new base produced very little food and that large imports of grain and other foodstuffs would be necessary. The Order's commission, which reported on the suitability of Malta, estimated that enough food was produced locally to feed the inhabitants for one third of the year.¹ However, Bosio² states that in the years preceding the Siege, the Island produced twenty to twenty five thousand salme (a salme is equivalent to eight bushels) of grain, which was sufficient to support the inhabitants for about eight months of the year. Whether the discrepancy here is due to an inaccurate first estimate, or a recovery in agricultural production between 1530 and 1565 is impossible to say. It is unlikely that the later estimate is amiss; Bosio wrote from official sources and the estimates contained there were annually put to the test when deciding how much grain to import.

The local deficiency of food was largely made up by imports from Sicily, where Malta enjoyed duty free grain rights. With the arrival of the Order, the Sicilian authorities immediately suggested that the Island was no longer part of their Kingdom and, therefore, non-entitled to duty free grain. In 1530 Charles Vth over-ruled this claim³ and in 1532 made an additional grant, to meet the needs of the Order, of 4,000 salme of wheat together with 1,000 salme of barley,⁴ each year, duty free from Sicily.

1. Giacomo Bosio, op. cit. 1602, vol. II, p.30.

2. Ibid. p.776.

3. A.O.M. 670, f.85.

4. Università No. 1, f.9.

The scope and size of these duty free food entitlements gradually increased. In 1554 the Order ~~were~~^{were} exempted from the payment of dues on foodstuffs manufactured at its Sicilian supply bases¹ and, by 1558, the Order's grain quota had been raised to 6,500 salme of wheat and 1,500 salme of barley. Up to 4,000 sheep and 400 pigs were available.² Large quantities of vegetables were also imported.

The Maltese, through their Università, also had cheap grain entitlements. Just after 1530 these were limited to 9,000 salme of wheat and 1,000 salme of barley and vegetables.³ The size of the entitlements was the subject of continual correspondence, claims, counter-claims and appeals to the Habsburgs, who were the overlords of Sicily and the picture does not clarify until some years after the Siege when we have figures showing both the rights claimed and the amounts imported.

In 1584 a memorandum⁴ sums the position as follows:-

The Order might draw every year;

6,500 salme of wheat.

1,500 salme of barley and 'legumi', although

it took only 750 salme of this.

The people of Malta and Gozo, via their 'Università', could draw

9,500 salme of wheat and an additional 2,000 salme

were available in times of need.

500 salme of barley and 'legumi',

The total entitlement for Malta is given as 19,250 salme.

1. Ibid. ff.59-60.

2. Ibid. ff.84-86.

3. Università No. 9, f.309v.

4. Università No. 1, f.137.

There are a number of problems and inconsistencies contained in these figures relating to grain requirements. We do not really know how the totals for the local grain harvest were computed but a system had been evolved.¹ The figures given for the harvest represent total production and not just the surplus. Calculations for grain requirements were based on the principal of one salme per person per year. This applied both to Malta² and Sicily.³ In the latter island this meant approximately one million salme were needed for home consumption and 200,000 salme had to be stored for sowing the following year.

In Malta, around 1590, the position was approximately as follows. In a normal year the combined production of wheat, barley and 'mischiato' ^(a hardy, mixed grain) tot-
alled about 34,000 ^{salme}. The population numbered c.30,000 ^{persons}. Probably between one fifth and one sixth ⁴ of the grain harvest had to be reserved for sowing in the following year - leaving approximately 28,000 salme for consumption.

At this time the combined grain allowance of the Università and the Order amounted to about 16,000 salme of wheat plus a small quantity of barley. On this basis, provided the traite was met in full, the Island had annually enough grain to feed c.44,000 people. However, the bulk of the local grain harvest was made up of barley and mischiato. Less than

1. In c.1587 Grand Master Verdall^e issued a 'bando' decreeing that all should declare their stocks of grain - R.M.L. 1069. This can hardly be the first such regulation unless, prior to this date, the size of the harvest had simply been estimated.
2. A.Mifsud, op. cit. 1918, p.180.
3. Helmut Koenigsberger, The Government of Sicily under Philip II of Spain, 1951, p.79 F.N.
4. Università No. 1, f.189.

2,000 salme of wheat was produced¹ whilst a great deal of the poorer quality grains were used for the feeding of stock. In 1632, for instance, there were approximately 2,000 horses, 4,000 bovines and 2,000 other beasts on the Island,² many of them stall fed. We must also conclude that a fairly large proportion of the Island's people lived, basically, on the poorer quality grains rather than wheat.³

Adequate information relating to the quantities of grain imported into Malta seems to be lacking in local collections of documents. Much material may well be found in Sicilian archives for the grain trade there was subject to detailed supervision by the Spanish administration.

Evidence from Maltese sources is fragmentary. A memorandum written in 1600⁴ states that the Order's entitlement of 6,500 salme of wheat and 1,500 salme of barley was met every year, from 1587 to 1600, with the exception of the famine year of 1591. This document does not inform us as to the fulfilment of the tratte as it related to the Università. Another document⁵ lists exports of grain to Malta between 1587 and 1601 from two Sicilian sources - the Conte di Modica and the Duca di Terranova. In normal years the former supplied five or six thousand salme of grain but in 1591, 1593, 1594, 1596 and 1597 he exported nothing to Malta. The Duca di Terranova supplied 1,000 salme each year except in 1591 and 1594. Whether or not these deficiencies were made good from other sources awaits further

1. Università No. 1, f.189.

2. Università No. 2, f.108.

3. Cassar-Pullicino reaches a similar conclusion in a study of Maltese dietary habits based on contemporary accounts. 'Antichi Cibi Maltesi,' M.H., vol.3, 1961.

4. Università No.2, f.2.

5. Ibid, f.6.

investigation but clearly, by the end of the sixteenth century, the established supply lines were liable to complete breakdown. Food was also imported from other sources. Some came from Sicily through the normal, dutiable, export channels. The European estates of the Order, at least in the early years of the Knights' rule in Malta, sent grain.¹ Naples² and the surrounding territory³ was another source. The galleys of the Order spent a deal of time hunting down grain boats, not only on the Barbary coast⁴ but also around the shores of Sicily; "Les galères de Chevaliers arraisonnent couramment les navires chargés de blé, au sortir des 'caricatori' siciliens: exactement comme les corsaires de Tripoli".⁵

The need for massive food imports was not only a drag on the Island's economic life but also lessened its strategic value. Whilst dependence upon outside sources of food was weakness enough, these sources themselves began to prove unreliable particularly as the Sicilian granary was running down. Braudel⁶ has shown that in the seventeenth century Sicily became a frequent importer of grain. He argues that grain production was liable to break-down from 1570 onwards.⁷ Prior to this there were years of shortage - the bad harvest of 1562 was particularly important to Malta.⁸

1. A.O.M. 417, Lib. Bull. 1536-40, f.283.

2. A.O.M. 429, Lib. Bull. 1561-63, f.223.

3. A.O.M. 432, Lib. Bull. 1568-69, f.242.

4. A.O.M. 432, Lib. Bull. 1568-69, f.229.

5. F.Braudel, La Méditerranée et le Monde Méditerranéen à L'époque de Philippe II, Paris, 1949, p.121.

6. op. cit. 1949, pp.466-467.

7. It should be noted that the population of Sicily was growing rapidly at this period.

8. A.O.M. 91, Lib. Conc. 1561-67.

The composition of the Maltese grain harvest was another problem. So much land was of poor quality that, of the grains, it could only grow barley and mischiato. The Island produced a small surplus of barley but was chronically short of wheat.¹

These weaknesses in local agriculture were congenital and sprung from the Island's lack of size and the poor quality of much of the agricultural land. They had been considerably aggravated by the economic problems of the late Middle Ages and, more recently, by the Great Siege of 1565. It is uncertain just how many Turks were billeted on and pillaged Malta during that year, although most estimators suggest 30,000 to 40,000. The effects of their four month stay was catastrophic.² When the peasants returned to the land they went back to a wilderness.

The Turkish force had arrived before the grain harvest was completed and much was lost. All livestock was driven within the fortified towns to sustain the defenders, or was captured by the Turks.

A few months after the besiegers had been repulsed a brief, for an ambassador of the Order, going to Philip II, stated that it will be many years, even if the Island is unmolested, before it recovers to the pre-Siege state.³ In 1569, nearly four years after the Turkish withdrawal, it could still be written, "this Island of ours by its nature sterile has become more so after the coming of the Turkish armada".⁴

1. A.O.M. 431, Lib. Bull. 1565-67, f.268 and A.O.M. 432, Lib. Bull. 1568-69, f.256v.
2. B.M. Additional Manuscript, 16, 176, f.315. Copy of a letter from Grand Master de Valette to the Pope, 11th, September 1565.
3. A.O.M. 431, 1567, f.268.
4. A.O.M. 432, 1569, f.256.

The damage done by the Turks was not the only hindrance to the rehabilitation of agriculture. There were well founded fears that the Turks might make a speedy return. The fortifications needed repair and expansion and just as the Maltese formed the body of the defence force, they constituted a large part of the available labour force as well. Many were required to labour on the new defences rather than their farms. Two years after the Siege "the major part of the Island remained uncultivated" as the men of the Island were working on the defences of the new capital - Valletta.¹

In 1569 the Malta harvest was again exceptionally poor and the grain harvested during the summer only lasted until the beginning of September.² Fears of another Turkish attack restricted the activities of the galleys. Their crews were needed to work on the Valletta fortifications and during the sailing season the Council of the Order were reluctant to commit them to missions which could result in the taking of grain boats, if these took them far from the base which might need defending.

The supply problems were aggravated by the necessity of feeding the large numbers of foreign troops brought into the Island, the men imported to labour on the works surrounding Valletta³ and the demands of visiting, allied fleets needing supplies.⁴

Maltese agriculture reached a nadir in 1565. By this time large areas of land were abandoned and production was limited to the simplest forms. Viticulture had been largely curtailed in the fifteenth century as a result

1. A.O.M. 431, f.269.
2. A.O.M. 432, f.225v.
3. A.O.M. 432, 1564, f.256.
4. Università No. 1, f.187.

of raiding and the proximity of more efficient producers in Sicily. What trees and scrubs remained were grubbed up by the Turks to make gun platforms and fortifications.¹ The land-use patterns were dominated by grains and stock.

Much of the land which had been abandoned in the late Middle Ages lay in exposed areas, particularly in the north and west. But population pressure on land still in cultivation, in more favourable areas, remained high. In 1551 a large part of the population of Gozo was removed by the Turks. The northern island was considered to be more fertile than Malta and there was no shortage of settlers anxious to farm the vacated lands. This suggests that farmers were prepared to incur risks provided the possible rewards were good and that, in many areas, abandonment may not have been simply the result of exposure but also of the marginal quality of the land involved.

The documentary evidence, relating to the latter part of the sixteenth century, is not sufficiently detailed to allow us to examine, in any but general terms, land-use patterns and the revitalization of agriculture. There are, however, a few documents giving quite detailed estimates of production although many of the figures they contain cannot be relied upon.

A description of Malta written in 1582² gives a picture of the countryside and peasantry which is still very depressed. However, by this time, grain production seems to have recovered to the pre-Siege level as the author

1. Balbi di Correggio, The Siege of Malta, trans. Balbi, Copenhagen, 1961.

2. 'Relazione dell 'Isola di Malta fatta alla S. Ta di N.S. Papa Gregorio XIII dell'anno 1582,' A.S.M., 1936, pp.291-292.

quotes an estimate which places the grain harvest at 20,000 salme. Another document, compiled during the reign of G.M. La Cassière (1572-81) gives the annual grain yield as 19,000 salme.¹

The figure for grain production, given in the 1590 estimate of population,² is 34,976 salme, which suggests that in the years immediately after the Siege the area under grains was considerably extended.

Another document, of not unblemished pedigree,³ gives considerable detail on the agriculture of Gozo. The greater part of the Island was cultivated at the time. The production figures (1587) are given below and whilst we may doubt the totals the list of products is interesting.

Formento	(Wheat)	1094.13	salme
Mischiato	(Mixed grain)	1378.15	"
Orzo	(Barley)	4669.3	"
Fave	(Beans)	18.5	"
Lenticchie	(Leguminous plant)	44.10	"
Cimino	(Cumin)	61.14	"
Lana	(Wool)	64.11	
Lino C ^{ra}	(Flax)	30	cartara (100lbs)
Cottone Cant ^a	(Cotton)	2000	"
Formaggi	(Cheese)	962	sardi
Miele	(Honey)	170	case

1. B.M. Royal Mss., 14, AXX 624.

2. Università No. 1, fl. 189.

3. We only possess an eighteenth century transcription of this document. 'A discourse on the Island of Gozo given to the Grand Master in 1587,' R.M.L. 142, ff.284-286v. The author gives no details as to the source of his figures and there are some small discrepancies within the document.

Approximately one third of the island's land was arable, some 660 acres were given over to pasture and the rest was rocky ground. Tree crops appear to be lacking. On the island there were 8,548 animals and a detailed break down is given.

Buoi	380 (oxen)
Vacche	240 (cows)
Vitello	270 (calves)
Pecore	3,840 (ewes)
Montoni	93 (rams)
Agnelli	488 (lambs)
Capre	1,270 (goats)
Capretti	195 (small goats)
Porci	992 (pigs)
Cavelli e giumente	182 (horses and mares)
Muli	72 (mules)
Asini	217 (asses)

What emerges here is a picture very similar to the one characterizing Malta of an agricultural economy dominated by grains and stock but, in addition, producing an important cash crop - cotton. The production of cotton in Malta, at this time, was apparently not nearly so important (300 Cantara).¹ i.e. This contrast may be the product of spurious statistics, although there have always been important regional differences between the two islands and the small production of cotton on Malta is, possibly, a reflection of temporary economic changes resultant upon the Siege, the building of Valletta and the strong demand for grain. As we have seen during the latter part of

1. B.M. Royal Mss, 14, ANN 624.

the Middle Ages cotton was an important crop in Malta.

It seems probable that in the years between the Siege and the fifteen eighties increases in population were supported by the produce of land returning to cultivation. By 1590 this process, as it affected grain production, seems to have been virtually complete. In 1590 a detailed estimate of population was made and on the basis of this an increase in the Sicilian grain quota requested. From 1590 onwards grain production does not appear to have increased greatly.¹ In 1617 the total grain production of Malta and Gozo was estimated at 36,600 salme² whilst the 1631 harvest was estimated at 36,472 salme³ and that of 1632 at 35,065 salme.⁴

Although grain production was not increased apparently after 1590 the population of the Maltese islands continued to augment itself and Malta became increasingly dependent on outside sources of supply.

Thus by the end of the sixteenth century the Order was faced with a battery of economic problems. The local population was growing rapidly, the external sources of food supply often proved unreliable and the carefully negotiated cheap grain privileges useless. Overcoming these problems led the Order into considerable involvement in the regulation of local economic life and during the seventeenth century new patterns of administration and control were developed.

1. In 1590 34,976.9 salme of grain were produced. Of this 1,783 salme were wheat, 13,774.9 mischiato and the remainder barley. Università No. 1, f.189.
2. Wheat 5,289 salme, mischiato 11,328 salme, barley 19,429. Università No. 1, f.44v.
3. Wheat 5,494 salme, mischiato 13,021, barley 17,957.
4. Università No. 2, f.108.

AGRICULTURAL DEVELOPMENT IN THE SEVENTEENTH CENTURY.

Agricultural development under the Order of St. John was not marked by the introduction of many new crops but rather by a slow modification of crop emphasis and land-use patterns, as a result of economic pressures.

At the beginning of the seventeenth century there were not inconsiderable areas of pastureland on both Malta and Gozo; such land soon became arable. Even the rough grazing - the *xaghara* and *moxa* - was, at least partially, made cultivable. And, because it was the basis of a cottage industry, the products of which were in demand, the area under cotton steadily increased until the end of the eighteenth century, whilst the land which was already arable, at the beginning of the seventeenth century, was considerably developed and subjected to more intensive utilization.

There were attempts to introduce new crops and, for health reasons, to suppress others but, in the overall picture, the modifications produced were relatively unimportant.

The greatest force operating on land-use patterns was the pressure generated by the Island's increasing population.

During the seventeenth century a change in the pattern of land ownership took place. The Order acquired considerable tracts of land and became directly involved in the agricultural economy. This involvement was motivated by a number of social, economic and strategic forces. The social pressures sprung largely from the constitution and traditions of the Order whilst the economic and strategic considerations were shaped, principally, by the Island and its poverty of resources.

When the Order was given Malta, in fief, by Charles Vth it automatically acquired the crown lands on the Island. At the time of Frederick II these had been extensive but subsequent overlords had disposed of many of the constituent fiefs. By 1530 there was not much land left and the Order started to rebuild the demesne. For instance, the important 'fego della Marsa' was acquired in 1582, at a cost of 11,000 scudi (a scudo was worth 1/8d), with money provided by Grand Master La Cassière.¹ Other Grand Masters, too, frequently bought pieces of land to add to the Magistral estates. Even so it was not until the first half of the seventeenth century that the Order really began to organize the land resources at its disposal. During the sixteen thirties the finances of the Order were weak and it was becoming increasingly difficult to collect 'responcions' from many of the European estates.² As a result, although there was little good quality agricultural land on Malta the Island became increasingly attractive for investment, as it was possible to exercise direct control. This factor became stronger in later years as the Order experienced persistent interference with its European property.

In 1643 the minutes of the Council of the Order³ record that there ~~was~~^{were} a number of fiefs in Malta, which became the Order's property in 1530, on which rent had never been collected. As a result of this minute a Magistral property book - 'cabreo Magistrale' - was compiled⁴ and an effort made to develop these assets.

1. Del Pozzo, Storia di Malta, vol. II, Venezia, 1715, p.206.

2. A.O.M. 257, f.60.

3. Ibid. f.152.

4. Treasury B. 289.

During the seventeenth century it became fashionable for Grand Masters to set up foundations, bearing their names, with which they endowed the Order. This desire to serve, and be remembered by, the fraternity had some important effects upon land-use, for these foundations frequently acquired large areas of rural property and invested capital in development. Grand Master de Paule set up a foundation to endow a galley, Cotoner acquired land, developed urban property, built warehouses and windmills to provide a 'fondazione' for the upkeep of Fort Ricasoli (M.R. 5772). And Manoel de Vilhena enterpreneuried a town, Floriana, to provide for the fort he built to guard Valletta's northern flank (M.R. 5573). The 'fondazione Lascaris' was one of the wealthiest and best organized of all the foundations. Lascaris applied his fortune to both urban and rural development, he bought land from private and public sources, including the Università of Mdina, and then invested considerable sums to raise its earning capacity.

The establishment and growth of these foundations is important, for the incomes derived from them made a significant contribution to the Treasury, gave the Order a stake in the local economy and provided the Knights with a means of raising agricultural productivity.

This interest in the land of Malta is reflected in a large increase in the available source material. Prior to the seventeenth century we have little more than occasional, and frequently oblique, references to agriculture and the state of the land. Now we are almost embarrassed by the plentitude generated as the Knights grappled with the administration

and development of their rural property. However, even in the seventeenth century, the material varies in quality, quantity and distribution.

LAND-USE IN THE FIRST HALF OF THE SEVENTEENTH CENTURY.

The great triad of Mediterranean agriculture is grain, vine and olive but in Malta this had been modified, by the medieval patterns of trade and war, to grain, cumin and cotton. At least these crops dominated the arable system practised on land of better quality. On poorer land the crop patterns were rather different.

There are numerous general accounts which can be quoted to substantiate this pattern of land-use on better quality land¹ but the most important primary source is the 'cabreo Magistrale' completed in 1654.² This volume³ is particularly valuable, for the surveyors who compiled it gave detailed descriptions of the land, its quality and the crops it was capable of producing. From these accounts it appears that good quality land was sown with grains, cotton and cumin. This was the case with the 'fego (fief) di Benhuerat' (M.R.4777), which occupied the flat floor of the Ghasel depression at its seaward end.⁴ These crops were probably sown in rotation.

Land of medium quality produced grains - barley, 'mischiato', 'tuminia'⁵ and sometimes wheat. Poor quality land could only support the hardier grains. Thus Comino, a small island lying between Malta and Gozo, composed of Upper

1. e.g. Giovanni Francesco Abela, Della descrizione di Malta, Malta, 1647.
2. The completion of this volume is announced in A.O.M. 118, 'Liber Concilior 1652, 1653, et 1654', f.186v. A description is also given and we know the volume has come to us in its entirety.
3. Treas. B. 289.
4. Ibid. f.43.
5. 'Tommon' - a local grain, planted in February on poor land, Louis de Boisgelin, Ancient and Modern Malta, London, 1805, p.103.

Coralline limestone and possessing a thin, patchy, soil cover produced only mischiato.¹

The designation bad was applied to the xaghara and moxa. Occasionally the latter would yield a crop of grains from its soil pockets but, more normally, such land was used as rough grazing.

Grains were threshed on threshing floors, 'Airi,' which were widely distributed over the Island.

In that part of the Island lying south and east of the Great Fault little land was given over to permanent pasture, although much land, of course, was used for the production of fodders. Abela² states that a great part of the local grain crop was consumed by stock. Today a large quantity of this crop is pulled green as feed and Treasury B. 289 contains references to 'faraina' (ferrana) which is barley harvested in this way.³

The principal fodder crop grown on the Island today is sulla⁴ but the plant was certainly not so important during the seventeenth and eighteenth centuries. There are references to 'gilbiena', as sulla is called in Maltese, in various documents but these are few and it would appear that the principal fodder crops were cereals and cotton seed. Thomas MacGill⁵ gives a detailed account of stock rearing in the early nineteenth century. Cattle were fed on green barley, sulla, bruised pulse, chopped straw, bran

1. Treas. B. 289, f.159.

2. op. cit. 1647, p.135.

3. Treas.B. 289, ff.22-23.

4. M.B.D., p.199.

5. Thomas MacGill, A Handbook or Guide to Malta and Gozo, Malta, 1839, pp.17-19.

and cotton seed. The last being the predominant feed. Ball¹ makes a similar statement - "Cotton seed is the chief article of food for cattle, and the Beef of the Bullocks fattened with it is very fine". It seems probable that the rise of sulla to the position of dominant fodder crop is associated with the decline of cotton production. Cotton seed was also used for fuel.² Beans were of some importance both as a fodder and for human consumption.

In the north and west of the Island there was land of good quality used solely as pasture. Part of the 'fego di Santi', in the Bingemma depression (M.R. 4374), seems to fall within this category³ whilst most of the Puales depression (M.R.4377) was similarly utilized.⁴ There were, in fact, important regional differences between the agriculture of the northwest and the rest of the Island. We shall return to this.

Besides cattle, sheep, goats, ^{and} pigs, ~~horses, etc.~~, a large amount of poultry, together with considerable numbers of rabbits and hares, were also produced for human consumption.

IRRIGATION FARMING.

It is possible to distinguish two Maltese agricultural systems on the basis of the availability of water. Where irrigation water is available distinct land-use patterns develop in the form of the 'giardini' or 'gnien.' Such units were usually situated in small, sheltered, valleys

1. P.R.O., C.O, 158. 1. Rendite de Beni pubblici dell' Isole de Malta e Gozo. Enclosure in Despatch, 26th December, 1801, f.21.
2. R.M.L. 429, 1754, f.159.
3. Ibid. f.79.
4. A.O.M. 1182, f.80 and Treas. B. 289, f.92.

served by perennial springs. In their most typical form 'giardini' produced a wide variety of tree crops and vegetables. The Magistral property book contains descriptions of several holdings of this type. The 'giardini' at 'Għain Kaijet' (M.R.4471) and 'di Due Fontane' ¹ had a water sharing agreement and both contained large numbers of citrus trees and pomegranates although production was concentrated on vegetables; a reflection of the market potential of Rabat. The 'Giardino Għayn Toffieħa' (M.R.4176) ² was less accessible and concentrated upon arboriculture. As the site of this holding was relatively exposed it was surrounded by a high wall, to protect the trees from the wind. This was normal practice in areas where good, natural shelter was lacking.

The range of tree crops grown within the 'giardini' was large. An eighteenth century description of one in Gozo ³ records nine types, ⁴ excluding citrus fruits. Whilst such virtuosity is exceptional a number of tree crops were normally cultivated in a 'giardino' rather than concentrating upon one species.

The distribution of 'giardini' is, naturally, related to the availability of suitable water supplies. The subsequent valleys, tributary to the depressions of the north-west were well favoured, as were the valleys serrating the edge of the Rabat-Dingli plateau.

In the south and east of the Island 'giardini' were less frequent.

1. Ibid. ff.55-57.

2. Ibid. ff. 90-91.

3. Treas. B. 294, p.4.

4. "fiche di latte, amendole, carrube, fiche d'india, zingole, perische, berochi, granati, viti."

del/u
 Around Qwormi (M.R.5270) at the edge of the Marsa depression, water lies near the surface and a rich development of 'giardini' took place, particularly after the building of Valletta. The unhealthiness of the area placed a break on exploitation. The numerous water works were associated with the annual outbreaks of fever and 'bandi' were frequently issued prohibiting the establishment of more 'senija' (noria).¹

In 1651² the Order forbade the laying out of vineyards and 'giardini' without a licence. No reason was given and as the penalties were trifling it may simply be a reflection of a growing bureaucracy.

Outside the 'giardini' tree crops made a very small contribution to land-use patterns. This was an expression of physical limitations - the need for shelter to escape strong winds and the necessity of irrigating certain tree crops, particularly citrus fruits. It was also due to the fact that the vine and the olive made very limited contributions to Maltese crop complexes. In the 'cabreo Magistrale', apart from the 'giardini' and the 'Boschetto', an area of woodland largely laid out by the Order, there are only five references to trees. (The volume contains descriptions of over 150 plots of land). The casual, wallside, distribution of figs, vines and carobs which is noticeable today in many areas was obviously lacking in the mid-seventeenth century. Giacinto comments on the absence of vines, even along the walls around fields, at the beginning of the nineteenth century.³

1. The first such regulation dates from 1648 and it was re-issued in 1673 - R.M.L. 1210, p.155 - and 1689 - R.M.L. 641, pp.170-171.
2. A.O.M. 788, f.217.
3. P.C.Giacinto, Saggio di Agricoltura per le Isole di Malta e Gozo, Messina, 1811, p.252.

AGRICULTURAL CHANGE DURING THE LATTER HALF OF THE
SEVENTEENTH CENTURY AND THE EIGHTEENTH CENTURY.

In this period the most important development was the increasingly dominant position which cotton came to occupy in the crop patterns and rural life of the Island. During the latter part of the sixteenth century, except in Gozo, cotton was not an important crop although, as we have seen, it had been widely cultivated in the Middle Ages. Decline was only a temporary affair and was probably related to the disruption of rural life, and the strong demand for grain in the years immediately succeeding the Siege. A change of this type would also account for the rise in grain production, in the latter part of the sixteenth century, to a figure in excess of the pre-Siege output.

In the seventeenth century this pattern of land-use was altered as, with the growth of the Island's population, it became necessary to employ arable land more intensively. Cotton gave this added intensity as not only did it provide work for farmers but it was also the basis of a cottage industry. Unfortunately it is impossible to be quantitative about increases in cotton cultivation and we have to utilize general accounts and supposition. Agius de Soldanis,¹ writing in the middle of the eighteenth century, states that "the Island produces some grain, and some fodder, but a small quantity, and much cotton". And there is no doubt that local textile industries underwent an enormous increase during the seventeenth and eighteenth centuries.

1. A.O.M. 141, f.311.

Although a great deal of cotton was imported this was only allowed after the local crop had been sold and there were other protective measures.

The actual volume of the grain harvest may have declined little - but its composition probably altered. As more and more marginal land was brought into cultivation the production of barley and 'mischiato' increased but, on land of better quality, wheat and cumin were probably giving way to cotton. However, such encroachments by cotton were limited by the nature of the rotations practised.

Other changes were minor. The growing of flax and hemp was, for a while, suppressed¹ but re-established at a later date. Tobacco was introduced around the beginning of the eighteenth century.² At first entry was opposed by the Order for fear that the plant would foul the air³ but later cultivation was allowed. No substantial area of arable land was occupied by the crop.

In the second half of the eighteenth century there was a scheme to introduce a silk industry into the Island, and perforce, mulberry trees.⁴ Zammit⁵ states that plantations of mulberry trees were established in the Marsa area.

There are numerous references to the planting of trees and vineyards, during the late seventeenth century and eighteenth century, but the area involved was small and no great modification of the crop patterns resulted.

1. R.M.L. 1210, 1639, pp.5-6.

2. R.M.L. 641, 1705, p.277.

3. Ibid.

4. R.M.L. 2, ff.685-689.

5. T.Zammit, Malta, the Islands and their History, Malta, 1929.

The increasing profitability of cotton cultivation may have acted as a check here, particularly in the case of vineyards.

A 'cabreo' of the 'fondazione Lascaris', compiled in 1784,¹ contains one hundred and thirty three entries concerning agricultural property, well distributed over the Island. Of the one hundred and thirty three entries only twenty three mention tree crops and only two describe holdings with more than twenty trees.

Potatoes were not introduced into the Island until the late eighteenth or early nineteenth century.²

1. Treas. B. 302.

2. "The cultivation of potatoes is now introduced, and will prove of great advantage to the inhabitants." P.R.O, 60, 158.

1. 20v. (1801.)

THE EXTENSION OF THE CULTIVATED AREA.

Some of the most important landscape changes which developed, during the rule of the Order, resulted from the need to extend, and to intensify the use of, the cultivated area. There were a number of methods by which agricultural productivity might be raised;

- a) Reclamation of wasteland.
- b) Improvement of existing arable land.

a) Reclamation of Wasteland.

In the early years of the seventeenth century, the area of unenclosed karstland (xaghara) was considerably larger than that existing today and any large scale extension of the farmed lands had obviously to take place in these regions.

Another form of wasteland also existed - the marshlands. In both cases, however, wasteland is something of a misnomer, for these areas made important contributions to the economy. More precisely, they were capable of more intensive utilization.

THE RECLAMATION OF THE EARLY SEVENTEENTH CENTURY MARSHLAND.

At the seaward end of virtually all the important valleys, finding an outlet on the east coast of Malta, there were, during the early part of the seventeenth century, tracts of marshland. The names used to describe these areas, in documentary evidence, are imprecise. The Maltese word 'ghadira' and the Italian 'pantano' can be used to describe anything from a pool to a bog. Some of the 'pantani' were certainly no more than winter marshland, whilst others, contained water throughout the year.

Origin and Distribution.

The torrents produced by Malta's sharp winter storms wash down large quantities of debris which are dumped in the lower courses of the wiefs. Unless the lines of drainage are carefully maintained they are rapidly blocked and pools of stagnant water develop.

Marine forces also contribute to these processes. During the winter the strongest seas are generated by the north, north-westerly and north-easterly winds. The majority of the east coast bays, where the wiefs run into the sea, face into the north-east wind, or 'grigal'. This wind drives material onto the foreshores and produces humped beaches which act as barrages, preventing storm water reaching the sea quickly. Occasionally, during violent storms, the barrage is breached or over-ridden and the land behind flooded. There are several recorded instances of this in the seventeenth century.¹ Flooding has also been caused by earthquake tremors.

The sites of 'pantani' are indicated by a number of sources of evidence. Some have never been successfully reclaimed, as is the case with the winter floodlands behind Mellieha Bay. Others, whilst no longer subject to flooding, except on very rare occasions, have subsequently gone out of cultivation after attempts have been made to irrigate them with water drawn from too near sea-level. The lands lying behind St. Paul's and Salina^{bays} are of this type.

Some sites are recorded today only in place-names. There are, of course, a number of names which can indicate former marshland but the

1. Treas. B. 289, ff.95-97.

commonest two are 'ghadira' and 'pantano'. The latter is particularly common in written records as officials of the Order, notaries etc., used Italian. The word 'simar', meaning reed, is another place-name indicative of marshland.

The most useful sources, in many ways, on seventeenth century marshland, are the descriptions of such land contained in the various property books found in the Royal Malta Library.

Utilization of the Marshland.

As a result of periodic floodings by the sea some valley mouths became salt-marsh and developed halophytic vegetation. At Salina and the ghadira behind Mellieħa Bay this vegetation was periodically collected, burnt and the ash sold as a fertilizer.¹

Many 'pantani' were quite highly developed. At Salina Bay a series of salt-pans were laid out and, near Msida, a flax retting pond was constructed in the valley infill a few feet above sea-level. The pond was fed by a brackish spring.²

In 1639³ the cultivation of hemp and flax was forbidden and the pond was stocked with fish.⁴ The 'pantano' at St. George's Bay had a similar history.⁵

Fish ponds may have been created in the lower courses of other valleys.

1. Ibid. ff.95-97 and f.52.
2. Abela, op. cit. 1647, p.28.
3. R.M.L. 1210, ff.5-6.
4. Abela, op. cit. 1647, p.28 and Treas. B. 289, ff.39-40.
5. Abela, op. cit. 1647, p.109.

Today they exist at Marsascala and Marsaxlokk but we have no evidence relating to their date of origin. The name 'menqa,' shown on the six inch map of the Island adjoining the Grand Harbour near Hamrun, means little pool or fish pond.¹ During the seventeenth century the 'pantani' were regarded as being under-utilized and unhealthy. This last point is worth some discussion as it had a bearing not only on the efficiency of the population but also on the utilization and settlement of the marsh-lands.

According to the account given by Giacomo Bosio the commissioners, sent by the Order to assess the suitability of the Island as a base, reported that each year, particularly in the month of August, the inhabitants were subject to a fever. This they attributed to the practice of washing 'lini'² in the fountains, which produced 'mal'aria'.³

Nearly all the 'pantani' had a reputation for producing 'mal'aria'. The Marsa was notoriously unhealthy.⁴ There are direct references to 'mal'aria' in association with the 'pantani' at Mellieha⁵, St. Paul's Bay,⁶ St. George's Bay,⁷ Marsa,⁸ whilst the land behind Salina Bay is named Bur Murrad, which can be interpreted as meaning sickly meadow.

1. Aquilina, op. cit. 1961, p.198.

2. Here 'lini' probably means flax but it has been interpreted simply as linin - Cassar-Pullicino 'Malta in 1575: Social Aspects of an Apostolic Visit,' M.H, 1956, p.21.

3. Bosio, op. cit. 1602, p.30.

4. Ibid. p.698.

5. A.O.M. 1185, f.45.

6. Deed of Giovanni Battista Micallef C.1650 - Notarial Archives, Valletta.

7. Treas. B. 311, f.16.

8. A.O.M. 258, f.210v.

Draining of the 'Pantani'.

There were two reasons for draining the 'pantani' - firstly, to create tracts of deep soiled, flat agricultural land and secondly, to eradicate possible sources of disease.

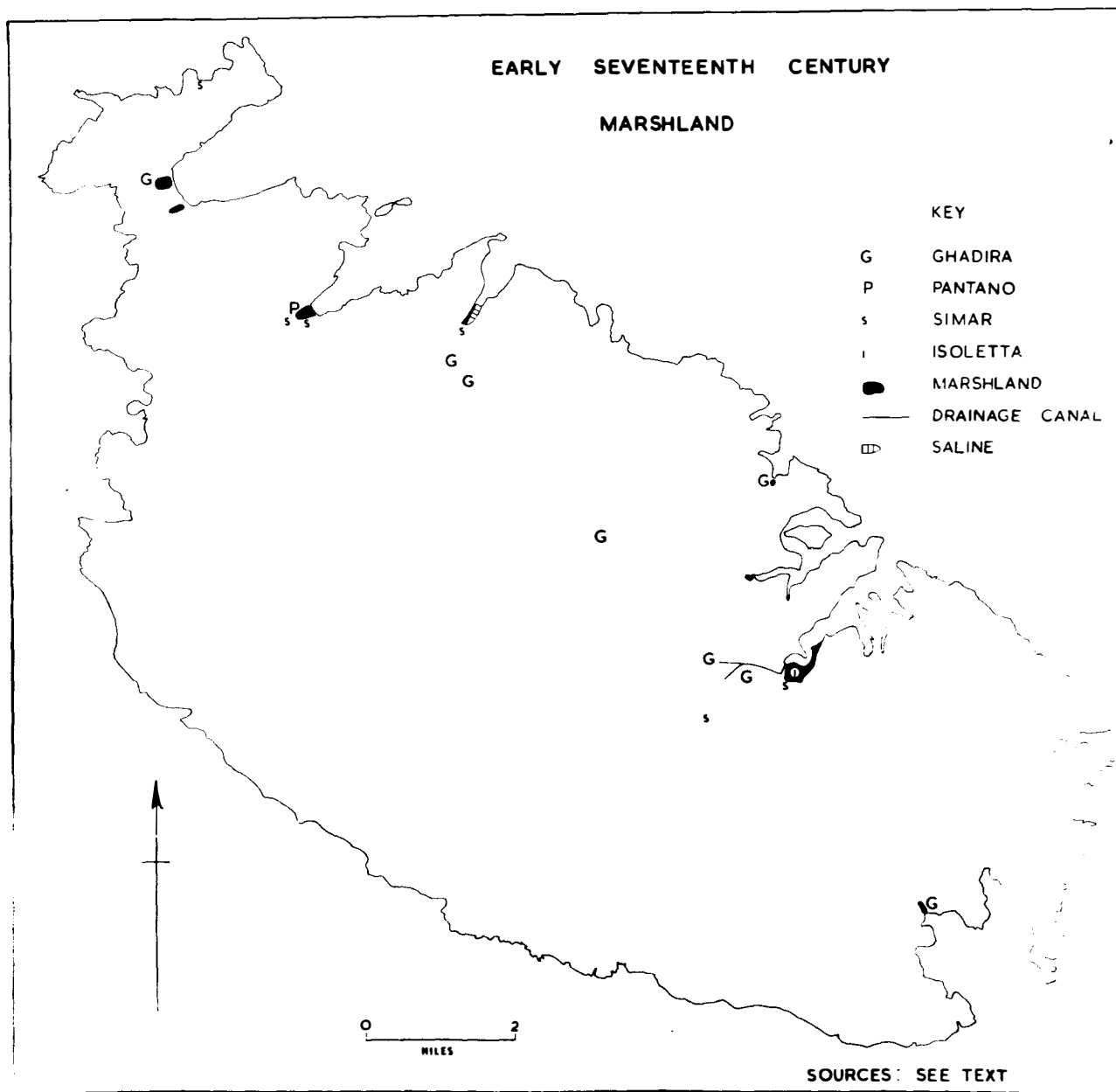
The largest and most important area of marshland was at the Marsa where there were at least two lakes.¹ The area was traditionally unhealthy and the people living nearby were continually subject to sickness. The area was frequently flooded, both by storm water, borne into the kidney shaped lowland by the tributary wields and by invasions of the sea. In 1650² the Council of the Order of St. John decided to drain the marshland, anticipating that the costs would soon be recovered from the newly created agricultural land. It was determined to exclude the sea from the entire inner basin of the Grand Harbour by erecting a seawall from one side of the harbour to the other. This was probably never built but by 1654³ drainage channels had been excavated to act as a storm water course through the Marsa lowland. The account of the area, given at this time, makes it clear that a considerable tract of marshland remained,⁴ although some land had been reclaimed and cleared of marshland vegetation.⁵ The situation in 1654 was closely akin to that shown in the accompanying figure; the small

1. Ibid.
2. A.O.M. 258, f.210v.
3. Treas. B. 289, f.25.
4. Ibid. f.16.
5. Ibid. ff.24-25.

Fig. 4:2 - Early Seventeenth Century Marshland.

EARLY SEVENTEENTH CENTURY

MARSHLAND



island being a knoll of Globigerian limestone which stands a little above the general level of the Marsa. The Order continued to reclaim land, as the infilling of the area progressed, until late in the eighteenth century when the remaining marshland was virtually choked up. By this time the valley had become "the broadest, the most extensive and fertile in the whole island." ¹

Early in the seventeenth century a would-be drainer of a piece of land behind the foreshore at Melliet^ha Bay successfully petitioned the Grand Master that the land might be transferred to him on condition that he ^{brought} ~~reduced~~ it into cultivation. ² An official of the Order reported ³ that the area had always been marsh, was useless, in fact dangerous by its production of 'mal'aria' and suggested that with strong works, to exclude the sea, the land could be rendered cultivable. Whether or not the supplicant achieved this we do not know but today the land still floods in the winter.

About 1650 the Università of Mdina had undertaken the draining of just over four and a half salme ⁴ of marshland lying behind the foreshore of St. Paul's Bay. ⁵ This land was transferred from the ownership of the 'Università' to that of the 'fondazione Lascaris' and is described in the 'cabreo' of the foundation, completed in 1658. The land had been walled and provided with drainage channels. Four salme of the former marsh had become good quality arable land whilst the rest yielded only herbage. ⁶

1. Louis de Boisgelin, op. cit. 1805, p.123.

2. A.O.M. 1185, f.45.

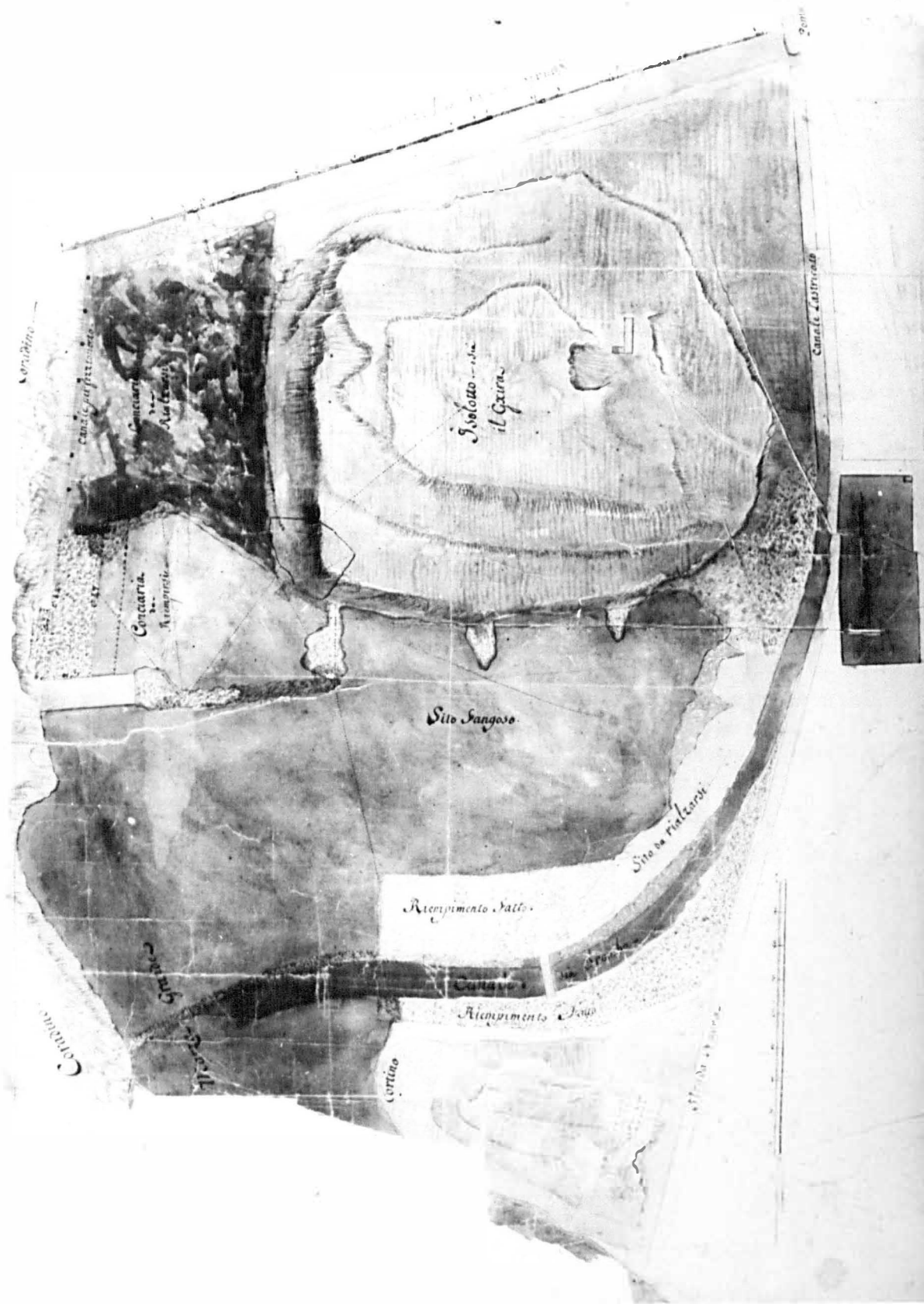
3. Ibid. f.45v.

4. A salma = 4.4 acres.

5. Deed of Giovanni Battista Micallef op. cit.

6. R.M.L. 1302, f.22v.

Fig. 4:3 - Undated Plan of the Marsa showing the small
island which formerly existed there and
some drainage works.



Lying behind the beach at Melliet^h_a, ^just to the north of a low limestone ridge which bisects the lowland, is a 'pantano' of long standing. The land still floods in winter as the ghadira name suggests. This area had probably been developed as salt-pans during the medieval period and in the mid-seventeenth century it was still referred to as the "Pantano delle Saline Vecchie".¹ During the early sixteen-fifties this land had been producing "bellissimi meloni d'acqua", later however the sea had broken in and soured the area.² By 1658 the land was owned by the 'fondazione Lascaris' and had been provided with drainage channels. Of the four salme of land only one had recovered to the point where it could be sown, whilst the remainder yielded water melons, vegetation for burning and possibly herbs (carebarre?)³. This rehabilitation was never completed. Later 'cabrei', compiled in the eighteenth century, show that a large part of the area remained waste - as it does today.⁴

The ghadira at St. George's Bay was used, during the early seventeenth century, for retting. In the eighteenth century the 'fondazione Manoel' acquired the land and drained it in 1736.⁵

The small stretch of water at Msida was probably not drained until

1. Treas. B. 289, f.95.

2. Ibid.

3. R.M.L. 1302, f.19v.

4. Treas. B. 296, 1721, f.387v. and Treas. B. 294, c 1794, f.65.

5. Treas. B. 311, f.116.

the nineteenth century, and certainly it still existed in the eighteenth century.¹

Other small 'pantani' existed at Pieta, St. Julians and there may well have been others at Marsascala and Marsaxlokk but documentation is lacking.

Inland, small pools frequently formed in low lying areas. Abela mentions several which were persistent. Ghadira Bordi (the first part of the name is now extinct) was one of the largest.

The total area of marshland, and land flooded during the wet season, can never have been very large but it did make several interesting contributions to the economy and health of the population. It may have influenced the settlement pattern. For instance the Romans had port facilities and possibly a town adjacent to the Marsa. The unhealthiness of the area may well have been a factor contributory to abandonment. In the north-west of the Island, which was largely uninhabited during the rule of the Order, the large number of 'pantani' found in the region may well have been one of a group of unfavourable factors which helped to keep the area empty.²

1. Treas. B. 290, f.8 and Treas. B. 291, f.4.

2. Boisgelin, op. cit. 1805, p.44.

SUMMARY OF MARSHLAND PLACE-NAME EVIDENCE.

Abela (1647) pp 64 - 109.

"Ghadira ta Xara."

"Ghadira ta Rez Latomia o pantano". (Near Żabbar).

"Ghadira tal Bordi."

"Ghadira di Torbet GharSagna."

"Ghadira di S. Giorgio."

Documentary Sources in the Royal Malta Library -

(Eighteenth Century unless otherwise stated).

A.O.M. 6385, (1617) f.125, "Casal Gadir Bordi".

Treasury B. 289, (1654) f. 24, reference to 'gionchi' at Marsa.

Treasury B. 289, (1654) f. 42, "Ta Ramla tal gadira" - near Benuarrat.

Treasury B. 289, (1654) f. 52, "Simar ta Saline."

Treasury B. 289, (1654) f. 95, "Pantano delle Saline Vecchie."

R.M.L. 1302, (1658) f. 22v, "Simar tal Pwales."

A.O.M. 262, (1673) f. 24, "Essimar tal Pwales."

Treasury B. 294, f. 107, "Il pantano, sive il Ghadira, ossia
le saline vecchie."

Treasury B. 294, f. 70v, "Santa Maria tal Mahatap, appellata tal
Hadira."

(Arable land when the volume was compiled).

Treasury B. 303, f. 29, "San Giorgio tal Ghadir."

Treasury B. 302, f. 71, "Pantano Pwales."

Other Documentary Sources.

1. c. Deed of Giovanni Battista Micallef C. 1650 Notarial
Archives, Valletta - "Il pantano tal p. Pwales."

RECLAMATION OF THE KARSTLANDS.

Whilst the area of marshland which could be brought to cultivation was small, a large part of the Island consisted of bare rock (*xaghara*) which, at best, was only thinly patched with soil (*moxa*). With a deal of effort such areas, which were used primarily for rough grazing, could become arable if the farming community was prepared, or forced, to build up plots of land on the bare rock. These plots, or '*campi artificiole*' (Fig. 2:1) not only involved considerable labour in their construction but were equally demanding in terms of maintenance firstly, because the soil had to be held in place by retaining walls and secondly, the limestone beneath was incapable of disintegrating quickly enough to provide new parent material for soil genesis. Such fields could only continue to exist as a result of "unremitting hand labour."

The economic conditions which have given rise, historically, to the processes of land creation are complex. It seems to occur principally in prosperous, secure, times when the farming community outgrows the available cultivable land and is unable to find an outlet for surplus numbers. Thus there is evidence of field building under the Romans, Arabs,¹ the Order and in the nineteenth century. In unsettled times, when these are marked by a declining population, many '*campi artificiolli*' cease to be tended and quickly disintegrate. In this way the agricultural area has expanded and contracted through history. Exposed and outlying areas have been the first to be abandoned. The north-west of the Island, beyond the Great Fault, was utilized during the Roman domination and during the

1. D.Trump, 'The Later Prehistory of Malta,' P.P.S, vol. 27, 1961, p.258.

Arab period (whether or not it was abandoned as a result of Vandal raiding in the fifth century A.D. is uncertain.) In the late Middle Ages it was largely abandoned and then recultivated under the Order and the British. Several areas in proximity to the coasts have experienced a similar history.

The creation of new agricultural land clearly presents a landowner with difficult tenurial problems, unless he is prepared to undertake the work himself. On the one hand the landlord wishes to ensure the development of his property whilst, on the other, the tenant requires security of tenure to forestall eviction, or excessive rent increases once his holding has been brought in to cultivation. A long term, or perpetual lease which was unalienable, provided certain conditions were upheld and inheritable was employed.

The Order, Università and the Church, who between them probably owned something approaching fifty per cent of the Island's farm land, all employed this type of contract. Although the matter has not yet been investigated in detail, it appears that large private landowners used a similar system.

Such long term, or emphyteutical, leases had their origin in classical antiquity. Both the Greeks and the Romans had used a related form of contract on municipal and state lands.¹ However, it was not until the enactments of Justinian that the institution passed into private law.² It may well have been the Byzantines who introduced the lease

1. R.W.Lee, The Elements of Roman Law, 3rd. ed., 1953, p.169.

2. W.W.Buckland, A Manual of Roman Private Law, 2nd. ed., 1939, p.166.

into the Island; it was certainly in use during the Arab domination.¹ By the latter part of the Middle Ages the system seems to have been highly developed and widely employed.² Under the Order, with the re-expansion of the agricultural area and the redevelopment of much land, the emphyteutical lease was eminently suited to the needs of the day. Of course, this was not the only type of contract employed and shorter leases were common, particularly on better quality land not requiring improvement. At the present day any lease of sixteen years, or longer, is taken to be an emphyteutical grant.³

A study of seventeenth and eighteenth century leases shows that the following conditions were normally incorporated in the contracts:-

- 1) The lessee must improve the land.
- 2) The land must be cultivated in accordance with the normal practices of Malta.
- 3) There could be no subemphyteusis without the permission of the lessor. Defaulters under this clause forfeited their tenurial rights.
- 4) Should the rent fall two years in arrears the owners could reclaim their property.
- 5) At the termination of the lease the land, and all the improvements, returned to the owners. The lessee had no rights on the land nor was there any obligation to renew the contract.
- 6) Frequently the lessee was obliged to erect a stone plaque in the wall of his holding giving an outline of the contract.

1. M.Amari, op. cit. 1880.
2. For instance Dora La Fertila, 'I possedimenti dei benedettini di Catania a Malta,' A.S.M., 1936, p.261.
3. V.Carwana and F.Mizzi, 'Agricultural Land in Malta,' The Law Journal, vol. II, Malta, 1947, p.122.

Such plaques are still common in the walls of Malta today.

7.) Many contracts not only stipulated a rent but also an annual payment in kind.

Fundamentally these conditions are little different in present day contracts.¹ The most noticeable differences ^{caused} ~~is~~ the cessation of payments in kind and the fact that eviction cannot take place until rent payments have been in abeyance for three years. In the form of emphyteusis promulgated by Justinian eviction could only take place after three years non-payment.²

In eighteenth century leases clauses (1) and (2) of the contract, those dealing with the obligations to improve the land and employ sound methods of husbandry, are frequently amplified and specific demands made. For instance, a 'giardino' on Gozo was leased, in 1783,³ for twenty-nine years. Within eight years the lessee had "to break up the rock existing in the property and in that part of the land which carried no soil he was to plant Milk and Indian Figs, or other trees more profitable to the owners, according to the judgement of their expert". Should the tenant fail to carry out this allotment the owners would cancel the contract, repossess the property and any new land - 'terre nato' - and improvements which the lessee had made.

In 1722 a holding near Mdina was given out on a seventy year lease⁴

1. Ibid.
2. R.W.Lee, op. cit. p.170.
3. Treas. B. 294, ff.1-2.
4. Treas. B. 293, ff.27-28.

and the emphyteuta was "obliged to renew, at his own expense, all the walls necessary to maintain the land and to plant the most suitable trees in it."

In general, clauses requiring lessees to build walls, convert rocky areas to productive land and to plant fruit trees are common. Occasionally the contract stipulates that the tenant will spend a certain amount of money, in a given period, on improvements.¹

The clauses dealing with husbandry are particularly interesting for, whether or not they were observed in individual cases, they give a picture of what was regarded as normal agricultural practice at the time.

The 'fondazione Paola' let a 'giardino', in 1743, for a four year period, under the following conditions:-²

Every year the tenant had, at his own expense, to make the first and second hoeings, stake, cut and remount the vines. Cleanse both the vines and the trees of 'vermini'. If the lessee lacked these skills then the lessor would provide someone who had.

The lessee was allowed to grow vegetables, however, whilst there was sufficient water available to supply the needs of the trees on the property, there was not enough to support cotton, onions and cabbage which had to be grown 'di seccagno.'

None of the orange or lemon trees were to be removed but if either they, or the vines, proved to be of bad quality then grafting could be undertaken.

1. e.g. Treas. B. 292, f.110.
2. Treas. A. 21, ff. 2v - 5v.

No crops were to be sown in amongst the trees.

The same 'cabreo' contains the conditions under which the 'giardino di wed Ghersuma' (M.R. 4073) was leased. The two leases are very similar except that irrigated crops might be grown at Ghersuma. However, in the event of a water shortage the trees were to take preference.

In 1774 the first of the two properties, mentioned above belonging to the 'fondazione Paola,' was re-leased at a considerably higher rent.¹ The conditions of the contract were substantially the same but there are certain additional clauses, designed to ensure more sophisticated agricultural practice. The wild vegetation between the trees had to be hoed out (this might be interpreted as mulching) and the lessee was obliged, every year, to spread "ben spento e maturo" manure on the land.

Such a plethora of detail was not normally included in leases, the lessee was usually obliged to cultivate the land according to the rules of good husbandry and no further guidance was given. Occasionally clauses relating to crop rotations were included. The lessee might be forbidden to crop his land year after year.² The lessors were, apparently, particularly interested in preventing the monocropping of cereals. For instance, some lessees were restrained from repeatedly sowing their land with 'semente di lavori.'³ Should this rule be broken then the rent would be doubled for each year in which the clause is transgressed.⁴

1. Ibid. ff.117-8.

2. e.g. Treas. B. 296, f.75.

3. The precise meaning of this phrase has not been determined but in context it appears to mean cereals.

4. Treas. B. 292, f.187.

Rotation of crops appears to have been the normal practice for another lease, after declaring that the land could not be sown repeatedly 'con lavori,' goes on to say that crops must be alternated "conforme l'uso di Malta."¹

1. Ibid. ff. 188-189.

THE DISTRIBUTION OF NEW LAND.

In the latter part of the sixteenth century Malta possessed large areas of open, rocky ground which were referred to as "spazio publico." Some of these areas were under the jurisdiction of the Università of Mdina and others under that of the Order. Two primary factors controlled the distribution of the 'spazi publici.' Firstly, they reflected the geology and were predominantly developed on the harder limestones. Secondly, they were related to the areas which had been abandoned by settlement and agriculture during the late Middle Ages.

During the seventeenth century efforts were made to cultivate some of these open spaces. Even in the late sixteenth century the Order had made grants of land from the 'spazi publici' to individuals. No documentary record of the number and scale of these grants has been found and on the death of Grand Master Verdell¹ (1582-1595) they were revoked and the land became common once more.¹ Early in the seventeenth century the policy of making land grants in the 'spazio publico' was re-established. By this time there were a fair number of poor, landless and often homeless families and they were given small plots, usually consisting of a few tummoli,² where they might build a house and create a small plot of land. The vast majority of these grants were made^{made} in areas of very poor land. For instance, a large number of grants were made in the xaghara lying to the north of Mosta (fig. 4:4). A number of the early seventeenth century grants were revoked in the sixteen-thirties.

The Università of Mdina, with the co-operation of the Order, adopted

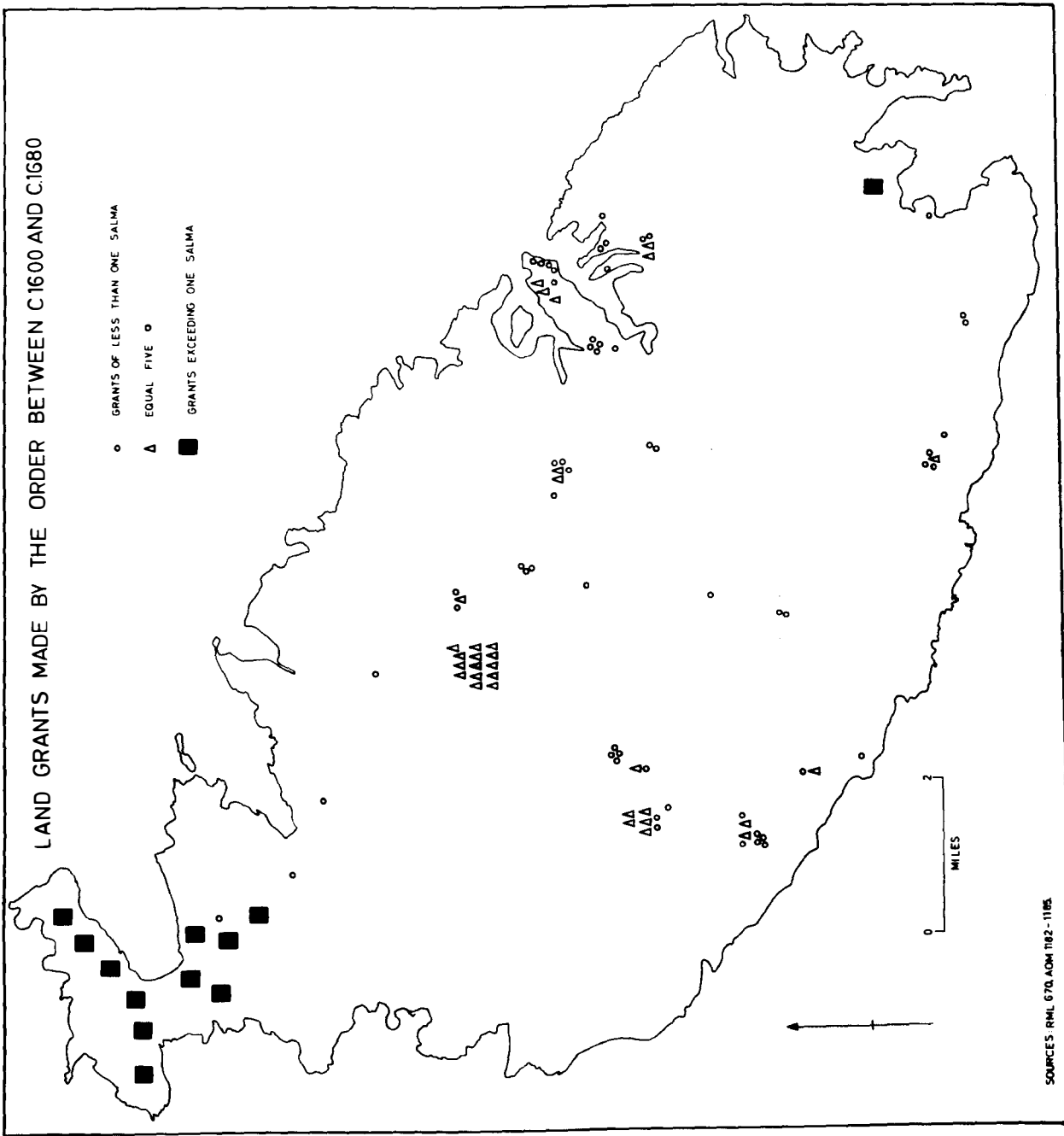
1. Del Pozzo, op. cit. 1715, p.366.

2. A tummolo - Maltese tomm - equals .278 of an acre.

Fig. 4:4 ~ Land grants made by the Order
between c.1600 and c,1680.

LAND GRANTS MADE BY THE ORDER BETWEEN C1600 AND C1680

- GRANTS OF LESS THAN ONE SALMA
- △ EQUAL FIVE
- GRANTS EXCEEDING ONE SALMA



a similar policy in relation to public open spaces. In 1627¹ the Università successfully petitioned the Grand Master that it might be granted various areas of 'spazio publico'. This land would then, by agency of the Università, be brought to cultivation. As a result local food production would be increased, money would be retained in the Island which at present was being used to buy grain and the Università would have more funds from which to meet its expenses. Similarly, in 1633,² the Università of Valletta and the Three Cities were granted land for the same purpose. A grant was also made to the ~~Università~~^{people} of Gozo³ in this period. We shall see later, by detailed study of a piece of land involved, that in general these schemes were not as successful as the entrepreneurs anticipated.

Besides leasing the land granted to it by the Order, the Università of Mdina subdivided additional areas of 'spazio publico' which it already controlled.

The 'cabreo' of the Università⁴ lists two hundred and ninety-five plots of land which, in the vast majority of cases, were apparently originally leased in the mid-seventeenth century. The largest number are in areas of xaghara (fig. 4:5) and in fact the name of one plot in nine is indicative of xaghara or moxa - e.g. gebel, xaghara, xuechi (thorns), misrah (open space), blata (rock), qortin (wild or wasteland).

It is worth quoting from a document of this period for it illustrates the nature of the socio-economic forces involved and the way

1. R.M.L. 670, f.57.
2. Abela, op. cit. 1647, p.74.
3. R.M.L. 670, ff.71-72v.
4. Treas. B. 303.

Fig. 4:5 - Land given out on development leases
by the Università of Mdina between
c.1650 and c.1680.

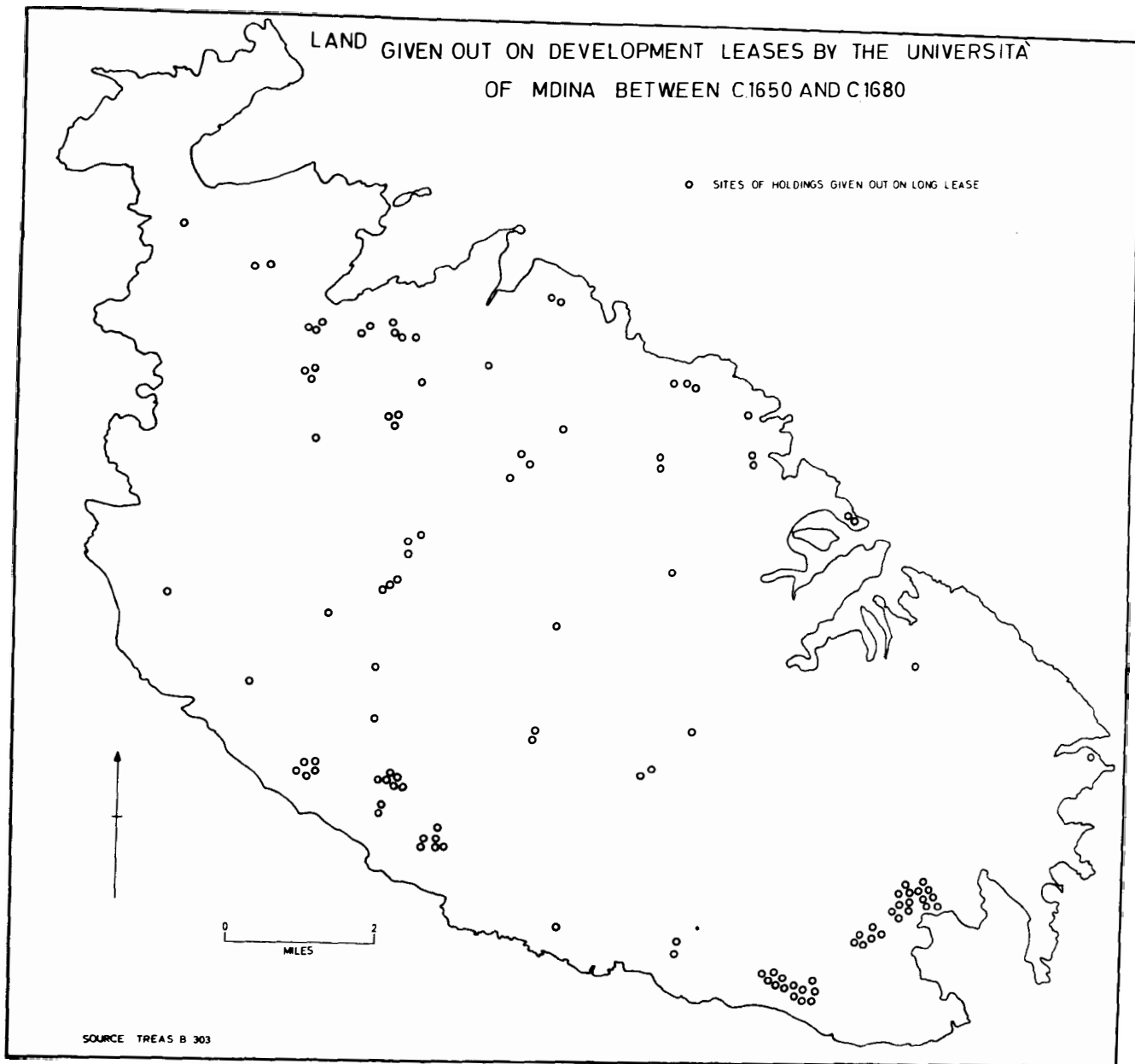
LAND GIVEN OUT ON DEVELOPMENT LEASES BY THE UNIVERSITA
OF MDINA BETWEEN C.1650 AND C.1680

○ SITES OF HOLDINGS GIVEN OUT ON LONG LEASE



0 2
MILES

SOURCE TREAS B 303



in which they were influencing land-use patterns.

In 1657 a supplicant asked the Università¹ for "a salma of land from the 'spati publici' of this island of Malta on perpetual lease in order that he might improve the land and render it useful and fruitful to himself and his successors". The applicant was successful and he was granted an area named "Xahara il foccania," the greatest part of which was "rocca". The supplicant undertook for his part to improve the land and not to sell it. Some of the traditional rights on the xaghara ^{wine} ~~have to be~~ safeguarded and an area had to be left for "pescagione di falconi."

The volumes of 'Suppliche' are full of references to large impoverished families lacking adequate housing and land.²

Now whilst we shall see that many peasants never successfully developed the land they were granted, during the seventeenth and eighteenth centuries the cultivated area was undoubtedly extended. As early as 1647 Abela states that a district just north of Birkirkara - Xwieki - has been reclaimed "by the industry of the peasants" and planted with trees and vines.³ By the end of the eighteenth century the effects of field building were quite noticeable and Ciantar reported that the productivity of the Island had been greatly increased as a result of many 'Spazi Publici' being ^{brought} ~~reduced~~ into cultivation.⁴ Specifically he mentions that much of Corrodino (M.R. 5571) had been cultivated at the expense of the Order.

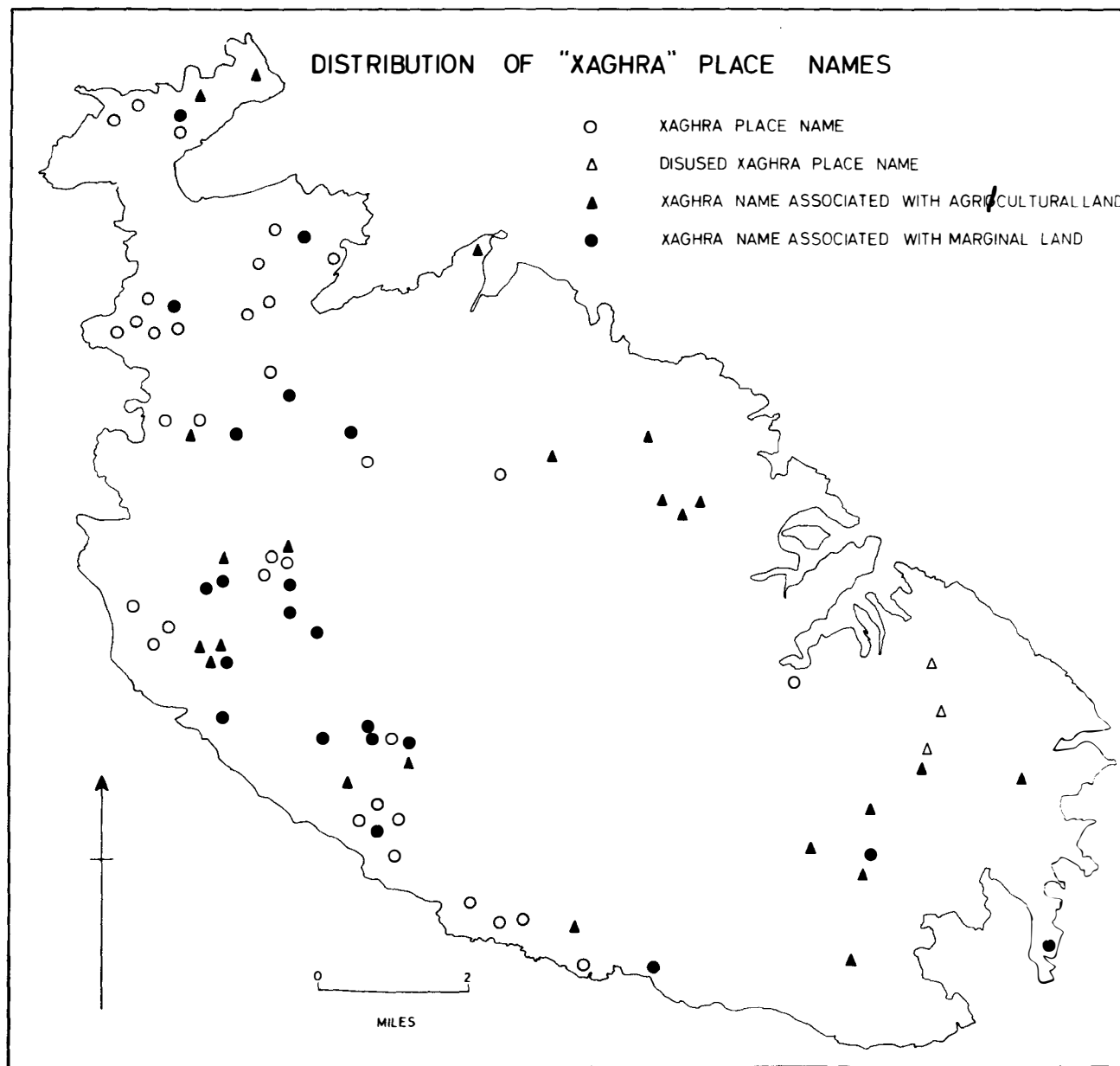
1. Treas. A. 154.
2. A.O.M. 1182 - 1184.
3. Abela, op. cit. 1647, p.85.
4. Ciantar, op. cit. 1772, p.406.

At one period something approaching a land fever seems to have developed, with peasants busily collecting earth for 'campi artificiale'¹ from open spaces, the roads and even the fortifications and their ditches!² In 1664 the collecting of earth in Floriana was forbidden³ and in the following year it was prohibited all over the Island unless a licence was obtained.⁴ This 'bando' was re-issued on a number of occasions during the eighteenth century.⁵ At about the same time there may have been some over-grazing of the 'spazi publici' for it was decreed that sheep and goats could not be pastured there without a licence.⁶ A 'bando', issued early in the eighteenth century, suggests that there may have been a tendency for unauthorized enclosure of the xaghara to take place as the population were restrained from erecting walls without a licence.⁷

It is impossible to be quantitative about the area of new land created. Undoubtedly many peasants failed to bring the land they had leased, or been given, to cultivation. There were a number of factors involved in this. Many individuals no doubt gave up the 'land' when other opportunities for employment came along. Whilst marginal areas, being developed by poor or economically marginal families lacking in capital, were very liable to succumb in times of recession, plague or famine. Above all farming was fickle.

1. The word 'chiuse' is sometimes used in contemporary accounts. In Sicily 'chiuse' is applied to plots of land developed on the lava flows of Etna. Francesco Speranza, 'Le Chiuse Etnee', Societa' Geografica Italiana Bollettino, serie IX, vol. II, Roma, 1961.
2. R.M.L. 641, 1697, f.232.
3. Ibid. f.143.
4. R.M.L. 1216, p.461.
5. R.M.L. 429, 1722-1736, f.5. and R.M.L. 429, 1765-72.
6. R.M.L. 1216, 1664, p.455.
7. R.M.L. 429, 1722-1736.

Fig. 4:6 - Distribution of Xaghara place-names.



del 6

The type of mediocre land which field building produced, unless irrigated, could only be used to grow grain and probably only mischiato and barley at that. It is doubtful if the poor yields obtained in marginal areas enabled this type of local grain to compete with the imported product, especially as the Order favoured a cheap grain policy and frequently gave subsidies to this end. However, where an established farmer decided to develop a piece of rocky ground his chances of success were much higher.

Figure 4:6 is an attempt to indicate the areas most concerned with field building and the extent to which the present landscape has been influenced. All xaghara place-names (i.e. xaghara, gebel, misrah, qortin, xuechi, etc) were collected. The principal source was the present six inch map of the Island. Many such names were also found in the Order's property books. When all the names had been collected they were analysed as follows. Each name was placed in its appropriate position on the map and the area to which it referred examined for present land-use on aerial photographs of the Island.¹ All xaghara names attached to land which was still of that category were plotted. A number of xaghara names were found in the 'cabrei' and many of these names no longer exist as the land to which they formerly referred has become arable - these, too, were plotted. Then all existing xaghara names, which are now attached to agricultural land, were plotted as were those associated with marginal land. It is quite clear from the resultant map that a considerable area of former karst has been reclaimed.

1. The Fairey Air Survey of 1957, housed in the Public Works Department, Valletta, was used.

The map also gives some idea of the distribution of 'terre nato,' as do figures 4:4 and 4:5 which show the distribution of land grants made by the Order and the Università of Mdina.

Such an analysis of place-name evidence is, of course, non-specific in time. Much of the land was certainly created in the nineteenth century for, in spite of the efforts of the Maltese during the seventeenth and eighteenth centuries, when the British arrived Captain Ball, later the Island's first Governor, estimated that "one third part of the Island is still uncultivated, and that the greatest part is the property of the Government, and susceptible of considerable improvement".¹ Towards the middle of the nineteenth century strenuous efforts were made to cultivate large areas, particularly in the north and west. Access roads and new villages were laid out and the land given out on the same type of long term, emphyteutical lease employed during the period of the Order.

The Improvement of Existing Land.

Many of the processes operating to raise productivity on barren and marginal land were also affecting areas which were already cultivated; unwalled land was enclosed, the depth of soil increased, small patches of rock were chipped away at the surface and covered with earth and new groves of fruit trees were planted. Sometimes the landowner paid directly for these developments and then increased the rent. Just as frequently the emphyteutical lease was employed and, as much of the land concerned was productive already, contracts of shorter term were the rule. The Order

1. P.R.O., C.O, 158. 3, December 1802, f.226.

6. frequently employed the former method and the Magistral property book¹ contains a large number of references to improvements, carried out at the expense of the Grand Master, as does the 'cabreo' of the 'fondazione Lascaris.'²

In general the property books contain a mass of references to improvements to walls, land or the ancillary facilities of a holding. This theme is so widespread that it needs no further treatment here.

1. Treas. B. 289.
2. R.M.L. 1302.

REGIONAL VARIATIONS OF AGRICULTURE WITHIN THE ARCHIPELAGO.

The varying patterns of physical and settlement geography described in ^{other} ~~earlier~~ chapters are naturally reflected in variations of agricultural land-use. Material does not exist which would allow us to analyse, in detail, the agricultural land-use regions which no doubt existed in the Islands. However, the available source materials give a clear picture of the major differences in agricultural practice which existed in various parts of the archipelago. The comparative fertility of Gozo is immediately apparent as is the relatively unintensified land-use practised in north-west Malta compared with the Heartland.¹

NORTH AND WEST MALTA.

In north and west Malta the pattern of land¹ownership is not nearly so complex as that found in the Heartland. Here the land was divided up into relatively large ownership units and by far the greatest part was in the possession of the Order or the Università of Mdina. These units were a relic of the large number of medieval fiefs which had existed in the area.²

1. The Heartland is roughly that area characterised by nucleated^d settlement in 1575 (fig. 6:3). The term was used originally in connection with Malta, by G.W.S. Robinson, 'The Distribution of Population in the Maltese Islands,' Geography, vol. 33, 1948.
2. A. Mifsud, 'Richiami alle Signorie del Passato di Malta', A.M., vol. III, 1918.

The differing physical conditions (chapter 1) and the exposure of the region had led to an entirely different pattern of development in comparison with the rest of Malta. When the Order came to the Island the northwest was almost entirely uncultivated apart from a few 'giardini'.¹ A century later Abela could still describe the area as the "parte de Malta inhabitata"² although, by this time, it was beginning to be redeveloped for agriculture. As a large part of the northwest was owned by the Order or one of the Università, and thus well documented, we are able to produce a fairly complete picture of land-use within the region from the mid-seventeenth to the end of the eighteenth century.

THE MID-SEVENTEENTH CENTURY LANDSCAPE.

The broad flat floor of the Wied il-Ghasel was occupied principally by the fief of Benuarat.³ At this time the present field pattern was in existence and no significant alterations have been made to it since. The land, which was described as being of good quality, produced grains, cotton and cumin. There was no irrigation farming whilst tree crops and vines were not in evidence. Today there are considerable tracts of irrigated land and the major crop on the unirrigated land is the vine.

The small village of Benuarrat (M.R.4777) was not in existence (it is largely a nineteenth and twentieth century creation) but a few houses and shelters for animals existed and it was about this nucleus that the present settlement grew.

1. Bosio, op. cit. 1602, p.30.
2. Abela, op. cit. 1647, p.64.
3. Treas. B. 289, f.42 et seq.

Higher up the valley in the area called Bingemma (M.R.4374) the landscape was more dissimilar from that found today. Here the Order held the fief of Santi¹ and although it had spent large sums on the erection of new walls the emphasis was still on the production of livestock. There are no references to arable farming.

In the next depression to the north, Pwales, a great variety of land use existed. In the early part of the century the valley appears to have been unkempt. During 1614 a farmer made a supplication for some land so that he might more effectively enclose his own arable plot, which was being continually damaged by the passage of grazing animals.² This suggests that a great part of Pwales was given over to grazing.

At the western end of the valley was the fief of Chain Tuffieha consisting of a 'giardino', arable land, grazing and some 'terre scapoli' or virgin land. The eastern extremity of the Pwales depression was marsh-land which was not reclaimed until c.1650.

Moving north³westwards, the next depression drains into the Wied Tal Mistra (M.R. 4479). Here the 'fondazione Lascaris' owned 'Mizieb Irrich'.³ The Foundation acquired the land in 1654, from the Università of Notabile, when it was "rustico et publico". By 1658 the one hundred and two salme of land had been surrounded by walls and whilst most remained rough but enclosed grazing some thirty salme had been brought to cultivation. Only a fraction of this was good quality land and some was so poor that it could only be sown with "la zappetta" (the hoe).

1. Treas. B. 289, ff.85-88.

2. A.O.M. 1182, f.80.

3. R.M.L. 1302, ff.21v-22v.

Fig. 4:7 - Aerial photograph (1957) of the
Wied il-Għasel. The predominant
crop of the alluvium filled depression
is vines.



As we have described earlier in this chapter, the depression lying behind Mellieħa Bay was largely marshland which was reclaimed around the middle of the seventeenth century.

On the limestone ridges, too, there is clear evidence of investment, enclosure and development. In 1652 the 'fondazione Lascaris' acquired the "Cortino di Ghajn Tuffieħa" from the Università of Mdina.¹ Again the land, on purchase, was "publico rustico" and used only for rough grazing. By 1658 it had been surrounded by walls and enclosures for animals had been built. A large area remained as grazing but twenty-six salme of mediocre arable had been developed and an 'ayra' laid out for the threshing of grain.

The northwest⁴ was particularly rich in 'giardini' as figure 4:11 shows and most valleys served by perennial springs were utilized in this way.

Thus there were three major facets to the agricultural economy of the northwest⁴ in the mid-seventeenth century: the 'giardini' with their vegetable plots and fruit trees, the major depressions which were part pasture and part arable growing grain, cotton and cumin, and lastly the limestone ridges grazed principally by sheep and goats with possibly a few pigs and bovines as well.

In sum, it may be said that in the mid-seventeenth century there appears to have been a great deal of investment in the agriculture of the northwest⁴ and land-use was intensifying. At this point the rule of the Order still had another century and a half to run and it might appear that a basis had

1. Ibid. ff.20-21.

been laid for years of steady progress; more and more 'campi artificiosi' created on the bare hillsides and a gradual raising of land-use intensity on the better lands. This did not take place.

Numerous 'cabrei' were compiled during the eighteenth century and with the aid of these it is possible to trace the subsequent history of many pieces of land already mentioned. In 1784 the 'fondazione Lascaris' compiled another 'cabreo'¹ and a comparison between this and the earlier volume² can be effected. In the northwest there is little evidence of intensifying land-use. A few more walls and enclosures for animals have been built, occasionally plots of land have been improved in quality but the overall impression is that for the last century the landscape has remained static, from a development point of view. One of the few important developments seems to have been at Pwales³ where the small tract of land drained in the middle of the previous century is now irrigated. But even here the evidence is not indisputable.

The history of Qammieħ (M.R. 4081), lying on the south side of Marfa Ridge, is particularly well documented. This was part of the lands granted, in 1628, to the Jurats of the Università of Mdina who were convinced that it could be developed for cultivation. The name Qammieħ means "wheat-growing land"⁴ which may indicate a former, successful, cultivation of the area. At the time of the grant the land was used for rough pasture and for the collection of fuel.⁵ Attempts were made to cultivate the land but by 1644⁶ the

1. Treas. B. 301 and 302.

2. R.M.L. 1302.

3. Treas. B. 301, f.56.

4. J.Aquilina, op. cit. 1961, p.225.

5. Abela, op. cit. 1647, p.74.

6. R.M.L. 670, f.28.

tenants have complained of the infertility of Qammieñ and the impossibility of sowing it. The rent had to be reduced by two-thirds to 367 scudi p.a. The history of the property can be picked up again in the middle of the following century and by 1745 and rent had only recovered to 610 scudi p.a. although from this point it rises steadily each time the four year agreement is re-negotiated. The Università did have to expend some capital on development during the period. In 1806¹ the land was let at 1120 p.a.; just a little over the price at which it was originally let one hundred and fifty years previously. A plan and (fig. 4:8) description of the land accompanies this last valuation, enclosure had taken place and a series of terraces built up on the south side of Marfa Ridge but less than one-tenth had become arable. Most of the remaining land granted to the Università in the area had also been enclosed but only small patches were cultivated. Qammieñ was part of the land given out on long term leases, by the British administration, in the mid-nineteenth century as part of a large scale plan to increase the cultivated area. By 1866² the terraces built by the tenants of the Università had been considerably added to and integrated within the nineteenth century landscape. The quality of the land had been improved and much had become arable.

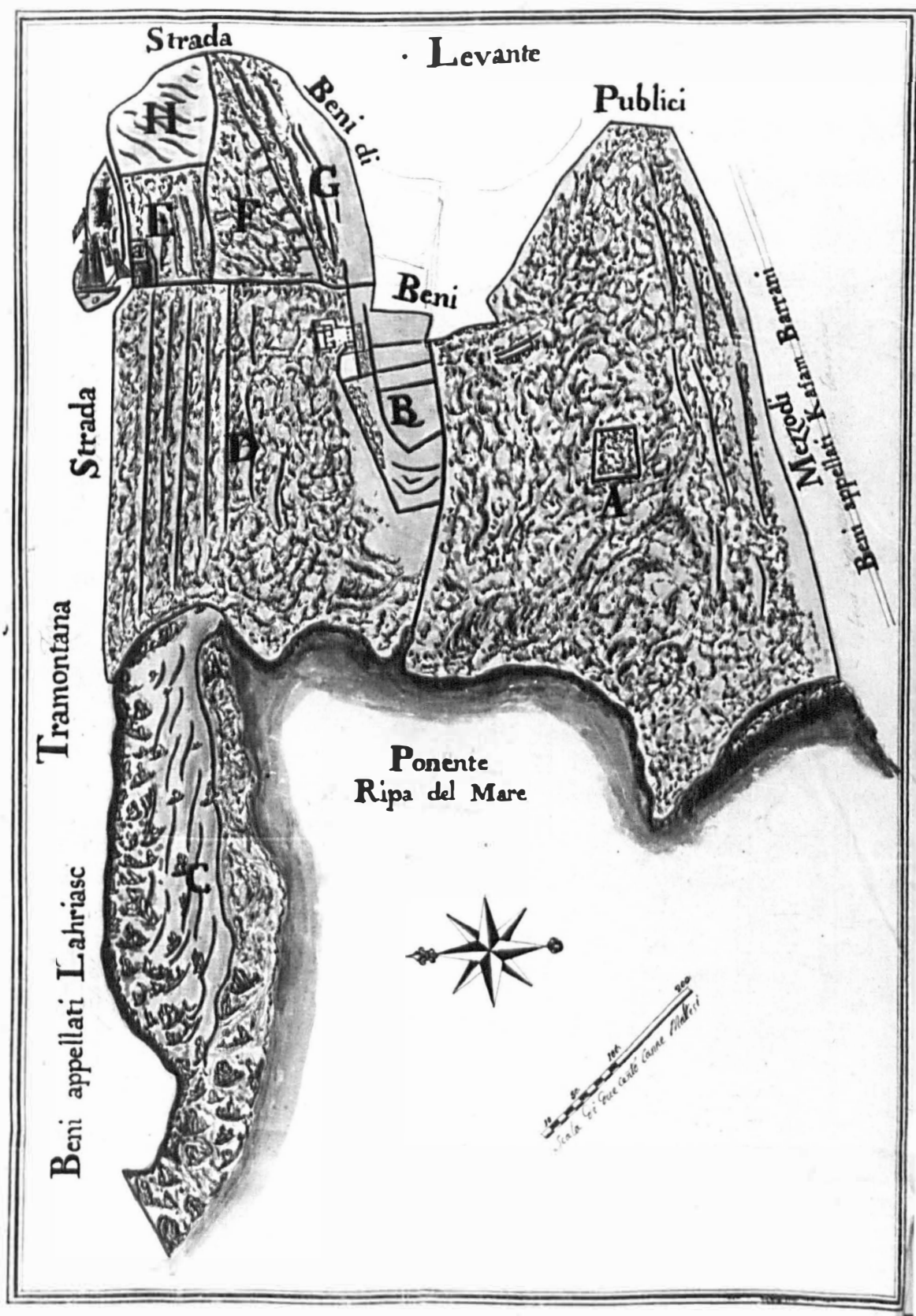
The Cortino of Ġħain Tuffieħa, on which the Lascaris foundation had encouraged development in the middle of the seventeenth century, was an unprofitable investment. The rent in 1657 was fixed at 400 scudi p.a. on

1. Treas. B. 303.
2. Descriptions of the Crown Property in Malta and its Dependencies, volume compiled in 1866, p.210. Housed in the Public Works Department, Valletta.

Fig. 4:8 - Early Nineteenth Century plan of land
lying between the south side of Marfa
Ridge and Kasam Barrani.



Source: Treas. B. 303.



l.c. a four year lease. In 1769¹ a twenty-nine year lease was negotiated and the Foundation was only able to obtain 160 ^{scudi} ~~soudi~~ p.a. for the land, although the area was slightly increased.² Little addition appears to have been made to the original walls and buildings put up by the 'fondazione' in the sixteen-fifties.

The 'giardino' element in the agricultural economy appears to have fared rather better. "Il Giardino ta gued Ha Iiron" was situated in a small valley which drains part of the west coast of Malta (M.R.4270) and there are detailed descriptions of it dating from 1621.³ Clearly even at this early date cultivation of the land was of long standing and there was a great variety of well established fruit trees. The rent in 1621 was 77 scudi p.a. The 'giardino' is described again a century later by which time the trees were no less numerous and in an unspectacular way the efficiency and facilities of the land had been considerably incremented. As an indication of this the rent had risen to 200 soudi p.a. plus two cappones and a lamb. The rent in kind, together with the enclosures for animals which the 'cabreo' indicates, shows that this 'giardino', at least, was the centre of a mixed farming unit.

1. Treas. B. 302, p.107.
2. The drop is not quite so exaggerated as it appears for a twenty-nine year lease would carry greater maintenance obligations than a four year let. In the latter case the Order would have been involved in some of the upkeep expenses.
3. Treas. B. 292, f.27.

Apart from the 'giardini' agriculture does not appear to have flourished during the century from 1650 to 1750 and the intensification of land-use which was promised in the mid-seventeenth century failed to materialize. The reasons for failure are complex and both social and economic forces were involved - some have already been mentioned - the general insecurity of the north¹west, the lack of settlements committing cultivators to long journeys between village and farmland, the problem of over production of barley and mischiato. Basically it seems to have become increasingly difficult to get any reasonable return from the effort and capital put into development. Like the British administrators in the mid-nineteenth century it was assumed, by the various development agencies, that the Maltese peasant could develop 'campi artificiosi' in the north-west as he had done for centuries elsewhere on the Island. This view overlooked the more difficult physical conditions and the fact that field building was probably a very slow process of 'assarting' on the borders of land already cultivated by established farmers.

The lack of a realistic return on investment capital can be illustrated by the case of "Mizieb Irrieh." In the early sixteen-seventies the land was let at 140 scudi p.a. yet in the previous five years the 'fondazione Lascaris' had paid 400 scudi for the upkeep of the walls and still another 50 had to be spent on rebuilding others which had fallen.¹

In addition to the problems mentioned above, there does seem to have been something of an agricultural depression in the century under discussion. Even prior to the plague of 1676 land was not easily let² and

1. A.O.M. 262, ff.100-100v.

2. Ibid. f.24.

after that event the countryside was clearly very distressed and rents had to be lowered.¹ Although more information is required the comparison of 'giardini' and marginal land rents seems to indicate that whilst the most profitable sectors of agriculture benefitted from the general economic advance, or at least kept pace with it, marginal land became less attractive. Possibly the rise of other industries offering alternative and more lucrative forms of employment and the slower population increase, to some extent, released pressure on the land?

Finally, how did the north-west fit into the agricultural economy of the Island as a whole? Certainly land-use in the region was much less intensive and this is brought out by figures 4:9 and 4:10. Figure 4:9 shows a strong concentration of 'spazio pubblico', virgin land ('terre scapoli') and unvalled land in the north-west. Whilst the concentration of xaghara place-names (figure 4:6) is again indicative of large areas of marginal land and land used only for rough grazing. Yet in contrast, the 'giardini', the most intensive and profitable form of agricultural land use practised in Malta at the time, are also concentrated in the north-west although, of course, the area devoted to this specialization was small.

The north-west was also a stock-rearing area, as figure 4:10 indicates. This figure was constructed by plotting all references to 'mandre', enclosures for animals, found in the 'cabrei.' These volumes cover the period from 1650 to 1798. The stock involved here was principally sheep and goats, which could survive on the poor grazing provided by the limestone ridges.

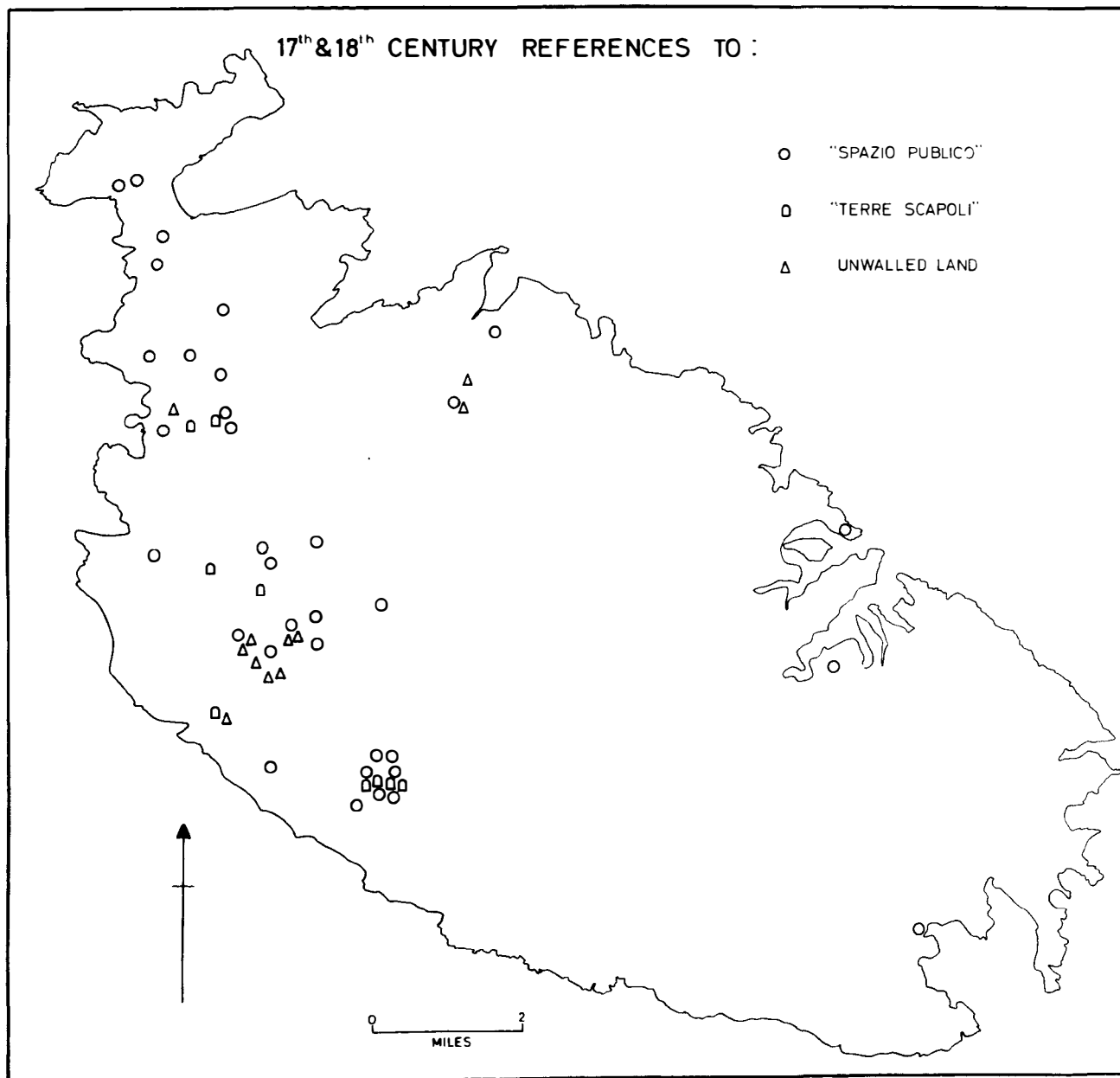
Any economic activity within this region was bound to be handicapped

1. Ibid. ff.100-100v.

Fig. 4:2 - References to 'Spazio Pubbico',
'Terre Scapoli' and unwalled land.

17th & 18th CENTURY REFERENCES TO :

- "SPAZIO PUBBLICO"
- "TERRE SCAPOLI"
- △ UNWALLED LAND



by isolation and lack of adequate transport facilities. From an agricultural point of view this must certainly have inhibited the possible range of crops. Communications within the region were not non-existent but they were poor (fig. 6:11). An important road, which was at least partially paved, passed through the area to Gozo.¹ However, away from the two roads running to Marfa communications were rudimentary and consisted of rough tracks whilst the limestone ridges were considerable obstacles. Other areas of marginal land, for instance parts of the Rabat-Dingli plateau, the Lower Coralline areas around Mosta and Żurrieq, were probably more successfully developed simply because they were nearer the existing settlements and intensively utilized farm land.

The Rabat-Dingli Plateau.

Even in the seventeenth century a large number of land-use patterns existed in this area, as an examination of figures 4:9, 4:10, 4:11 will show. The plateau displays strong concentrations of xaghara place-names, 'terre scapoli', unwalled land and 'spazio publico' all of which are indicative of marginal and waste land. There is a concomitant concentration of 'mandre' for the sheep and goats grazing the poor land. But in this region are also found the most extensive outcrops of Blue Clay and thus a high density of 'giardini'. The plateau is also marked by a number of solution hollows and valley head sink holes. It would appear from the plot of mid-seventeenth century 'giardini' that these features had not been exploited for irrigation water, as they frequently are today. Such areas

1. Abela, op. cit. 1647, p.74.

Fig. 4:10 - References to 'Mandre.'

were probably utilized for cereal and cotton growing. Cattle rearing was undoubtedly important, too, particularly on land adjacent to Mdina and Rabat. At Dingli, Għar Kibir and Negret reclamation of the karst was as successful as anywhere on Malta during the period.

From the above it is clear that nearly all the land-use patterns encountered on Malta under the Knights were found on the Rabat-Dingli plateau - the extensive cultivation of cereals on marginal land, rough grazing on the karst, intensive irrigation farming, cattle-rearing, the patterns of land reclamation and the cultivation of cotton, cumin and wheat on the better land.

Central and South-Eastern Malta or the Heartland.

On virtually every distribution map included in this study the Heartland emerges as a distinct region. It is marked primarily as the area with the densest settlement pattern and the highest agricultural intensity but it is also suggested by the distribution of a number of additional phenomena.

In the Heartland the size of agricultural holdings was much smaller than that found in the northwest. Unfortunately neither the Order nor either of the Università owned many large blocks of land and this, coupled with the generally small size of land ownership units in private possession, makes it very difficult to build up a picture of land-use over extensive areas. Certain generalizations are, however, possible.

Firstly, the proximity of settlements to agricultural land obviously had an outstanding influence on land-use, not only in terms of intensity but also on crop selection. The harbour towns, as they expanded, exer-

cised an increasingly powerful influence on agriculture by their demands for fruit, vegetables, milk and meat.

Although figure 4:10 shows very few 'mandre' in the region, stock-rearing was important. 'Mandre' were normally open enclosures used primarily for sheep and goats whilst cattle were housed in roofed buildings or in caves. Within the heartland very little land was given over to pasture and due to the nature of the underlying rock there was little rough grazing. Bovines were stall fed and goats were grazed at the wayside^{or} in fields of stubble.

The region contained large areas of good quality land which, except on the steeper slopes, was probably self perpetuating and did not involve cultivators in the time consuming activities of maintaining a plethora of retaining walls. Being, relatively, so fertile this region was dominated by the production of cotton, cumin and grains on unirrigated land.

Although lacking outcrops of Blue Clay this region did possess a number of 'giardini'. These were developed in areas where it was possible to tap the lower water table at not too great a depth. There were important concentrations of 'giardini' around Qormi, in the Wied is - Sewda and between Lia and Birkirkara in the valley draining into Msida Creek.

Fig. 4:11 - Distribution of 'giardini' c.1650.

cap

DISTRIBUTION OF "GIARDINI" C.1650

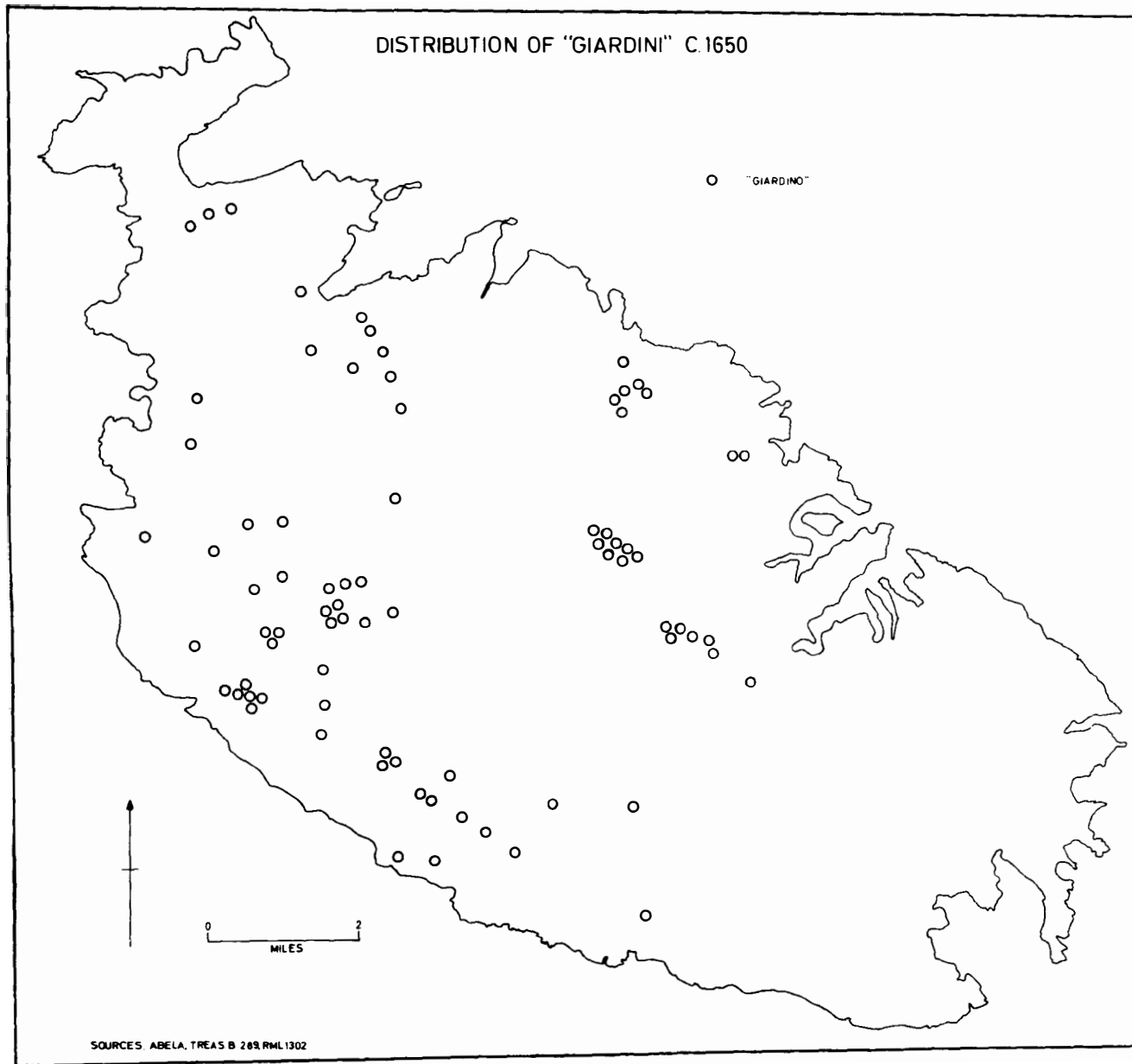
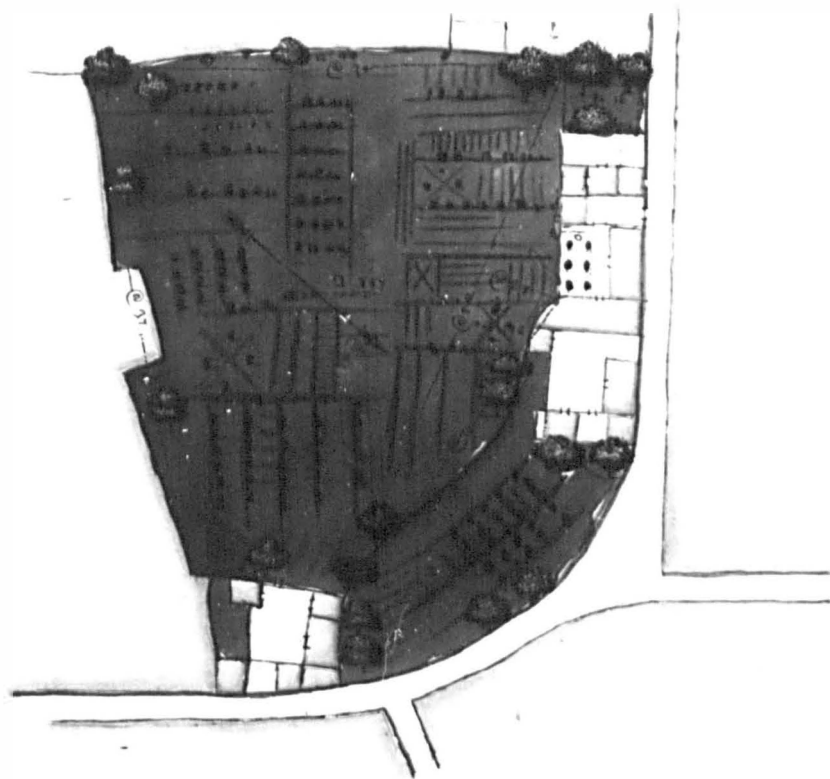


Fig. 4:12 - An Eighteenth century 'Giardino' near Żebbuġ.

Treas. B. 290.



10 5 10 20 30

Scala di @ 30 per la porta Sol^a Piazza

GOZO

To the north of Malta lies the smaller island of Gozo which made useful contributions to the food needs of Malta. During the latter part of the Middle Ages Gozo was able to export grain to Malta in years of good harvest.¹ The Commission of 1528 commented on the fertility of Gozo in contrast to Malta.² A large section of the Gozo population was removed by the Turks in 1551 but the island may have escaped large scale devastation during the siege of 1565. In 1582 Gozo could be described as abounding not only in the necessities of life but also in "delitie." Considerable quantities of food were exported to Malta at this time.³ Abela, writing in⁴ the seventeenth century mentions exports of grain from Gozo to Malta but by the end of the Order's rule this situation seems to have changed. Boisgelin⁵ states that Gozo did not grow enough corn for the local population and seven or eight thousand salme of grain were imported every year. This import figure appears to be rather excessive as there is a reference (non-quantitative) to the export of 'farina', barley, mischiato and wheat from Gozo to Malta in 1739.⁶

The only figures we have relating to the quantities of foodstuffs imported into Malta from Gozo are for the year November 1661 to November 1662.⁷

1. E.R. Leopardi, 'The Island of Gozo, 1432-1453,' M.H., 1962. Quoting a document of 1432.
2. Bosio, op. cit. 1602, p.30.
3. 'Relazione dell' Isola di Malta ... 1582,' A.S.M., 1936, pp.292-293.
4. Abela, op. cit. 1647, p.135.
5. Louis de Boisgelin, op. cit. 1805, p.60.
6. R.M.L. 429, July 20th, 1739.
7. R.M.L. 670, f.18.

Lambs and kids	1,515	
Bovines	215	
Sheep and goats	685	
Pigs	1,230	
Cheese	527 'panari'	
	115 barrels	
Doves	4,075	
Poultry of various types	20,929	
Melons, almonds, pomegranates	quantity unspecified	
Wheat	2,185	salme
Mischiato	2,335	salme
Barley	5,130	or 3,130 salme
Vegetables of various types	791	salme
Cotton	2,000 cantara	(a cantara = 100 lbs)
Cumin - bitter and sweet	340 cantara	

At this time Gozo is clearly producing a surplus in every sector of agricultural activity. As the population of the island increased the surplus obviously became less and it is probable that by the end of the eighteenth century little grain was produced for export.

The import figures indicate that stock-rearing played a very important part in the agricultural economy of Gozo. This was still true at the beginning of the nineteenth century when it was commented that "the pasture land is fine, and they feed great quantities of cattle for the use of Malta". Similarly fruit and vegetables were exported and every

day five or six boatloads of provisions were shipped from Gozo to Valletta.¹

There were also a number of minor differences in crop emphasis between Malta and Gozo. Small quantities of sugar cane were produced in Gozo and it is doubtful if any land was utilized in this way in Malta.² Boisgelin states that in Gozo the cotton tree was cultivated rather than the annual variety grown in Malta.³ It has also been suggested by an eighteenth century writer that citrus fruits were not produced in Gozo at the time. This statement appears doubtful.

1. Louis de Boisgelin, op. cit. 1805, p.60.
2. P.Brydone, op. cit. 1744, p.338.
3. Louis de Boisgelin, op. cit. 1805, pp.60-61.

COMINO

Lying in the channel separating Malta and Gozo is the small island of Comino. Isolated and composed of Upper Coralline limestone the island is, in every sense, a marginal area which remained abandoned until the beginning of the seventeenth century. The island has some military value and in 1618¹ Grand Master Wignacourt proposed to the Council of the Order that he should build, at his own expense, a small fort on Comino to give security to boats using the channel.

Prior to this time Comino was used occasionally for hunting, the collection of dried grass² and faggots for use in building fortifications. When the Comino tower was completed a small number of farmers were introduced, the scrubland was cleared and the island brought into cultivation.³ Comino was never very fertile and produced little more than mischiato.⁴ By the mid-eighteenth century a plan of the island shows a tower, a small cluster of buildings, including a church and a few fields.⁵

1. R.M.L. 6395, f.11.

2. R.M.L. 149, f.139.

3. A.O.M. 106, Lib. Conc. 1616-1620, ff.124v - 125.

4. Treas. B. 289.

5. Treas. B. 290, f.104.

CHAPTER V

THE GROWTH OF POPULATION.

The population of Malta is chronically unstable. Either it is declining rapidly, in response to unfavourable conditions, or, in periods of prosperity, it is growing so quickly that it outruns any realistic rate of economic growth.

We are fortunate in that there is a large amount of documentary evidence from which it is possible to trace, in broad outline, the pattern of population growth during the rule of the Order. The accompanying table summarizes this information. Some estimates of population, which pre-date the coming of the Order are also included. Little is known about the figure for 994 A.D. and small reliance can be placed upon it; although it appears to fit the overall pattern quite well. The number of families listed in 1240 A.D. suggests an absurdly low total population. However, this list was compiled for tax purposes and we do not know what criteria were used to determine inclusion. The economic conditions which, in broad, prevailed between the tenth century and 1240 A.D. would suggest that the population grew steadily in numbers. If we accept the 1240 A.D. figure as representing the total population then, in the next three centuries, the population of the Maltese islands must have grown steadily and this seems most unlikely. The Moslems were expelled in 1244.

In the latter half of the thirteenth century, after the Aragonese

TABLE 5:1

Estimates of the Population of the Maltese Islands up to 1800.

		<u>MALTA</u>	<u>GOZO</u>
(1)	994	16,767	4,544
(2)	1240	1,111 f	
(3)	1394	4,000 f	400 f
(4)	1490	16-18,000	
(5)	1528	17,000	
(6)	1530	20,000	
(7)	1530	18,000	
(8)	1590	27,000	1,864
(9)	1614	38,429	2,655
(10)	1617	40,963	2,835
(11)	1632	50,135	1,617
(12)	1658	45,688	3,923
(13)	1670	44,290	6,500
(14)	1680	43,800	5,700
(15)	1760	68,800	
(16)	1789	90,000	

f = families.

- (1) A.Mifsud, A.M, vol. III, No. 5, 1918, p.167, F.N.
- (2) E.Winklemann, Acta imperii inedita saeculi XIII., Innsbruck, 1880-85. Quoted A.Mifsud, Ibid.
- (3) Estimate of a traveller. R.Valentini, A.S.M, Anno VII, Rome, 1935, p.62.
- (4) Estimate by Mifsud based on documentary evidence, A.M, vol. III, No. 7, 1918, p.283.
- (5) L'Abbe de Vertot, The History of the Knights of Malta, London, 1728.
- (6) Fra J.Quintinus, Insular Melitae Descriptio, Lyons, 1536.
- (7) Università No. 1, f.187.
- (8) - (15) See page 136.
- (16) M.Richardson, M.B.D, p.135.

sacking of the Island,¹ what evidence we have indicates a declining population together with conditions of increasing hardship.² This is particularly true of the fifteenth century, when the Università was obliged to ban the crewing of 'fuste' (armed boats for piracy) at Malta in an attempt to halt the decline in population numbers.³ As has already been suggested (chapter II) attacks by corsairs also eroded the population and the settlement pattern. Plague, too, was responsible for many deaths.⁴

Mifsud has estimated on the basis of documentary evidence that the population of Malta at the end of the fifteenth century was, "sixteen or eighteen thousand souls".⁵

The Jews were expelled in 1492.

1. Finke, Acta Aragonesia, quoted by Valentini in 'La Sopravvivenza della Universitas Meliventina fino alla cessazione delle infedazioni dell'isola,' A.S.M, Anno VII, Rome, 1935, p.41.
2. R.M.L. 860, 1455, f.82.
3. Ibid. f.54, 1429. A similar document (R.M.L. 855, doc.2) relating to the year 1440 has been published by R.Valentini, A.S.M, vol. VIII, 1937, p.482 and A.Mifsud, A.M, vol.III, 1918, p.233-4 quoted another referring to the year 1449.
4. R.M.L. 860, 1455, f.82.
5. Quoted by A.Mifsud, 'Richiami alle Signorie del Passato di Malta,' A.M, vol. III, 1918, p.283. R.M.L. 860, f.172, on which Mifsud bases this estimate, gives the number in the militia.

SOURCE MATERIAL RELATING TO THE PERIOD 1530 - 1798.

With the arrival of the Order our information on the size of the population of the Maltese islands becomes more plentiful and detailed. During the later part of the sixteenth century and in the seventeenth century a number of estimates of population were made by enumerators working under the command of the Sicilian Viceroy. Information on population, within the various settlements, was probably obtained from parish priests, who kept fairly reliable records, the 'status animarum,' of all persons living within their jurisdiction. These estimates of population give not only a total figure but also a breakdown by parishes.

The Sicilian authorities required these estimates to establish the size of the population of Malta so that the supplies of duty free wheat could be regulated accordingly. For instance the "Descrittione de numero del popolo delle Isole di Malta, et Gozzo fatto nell' anno 1617"¹ states that the population count was undertaken as a result of a supplication from the Jurats of the Università of Valletta, requesting an increase in the 'tratte' or duty free grain allowance.

In the eighteenth century many fewer estimates of population were made and this was probably due to the increasing inability of Sicily to

1. A.O.M. 6385 ff. 123 - 128v.

Fig. 5:1 - Part of the record of the population
estimate of 1658.

supply Malta's grain needs. It became pointless to raise an entitlement which could not be met anyway.

'A priori' these estimates of population provide a good base for an analysis of population growth and distribution. Unfortunately the material is, in some respects, unreliable. The linking of the *tratte* to population numbers may well have led to some inflation of the figures in spite of the Viceroy's enumerators.

Theoretically the figures for any one parish, given in an estimate of population, could be checked against the 'status animarum' compiled in the same year. Unfortunately this second source has not been widely preserved. The "Liber Status Animarum Naxari A. 1688 - 1731" (the oldest volume retained by the parish) gives the following information. In 1688 the population was approximately 1,450 and by the time the volume was completed, in 1731, there were about 1,600 people living in the parish. During the period no daughter parishes were created.

In the 'census' of 1680 the population of Naxos was given as 1,564.

In this instance the 1680 estimate seems to approximate fairly closely to the truth but before we can make any conclusions more comparisons of figures are required. However, parish records are not well preserved and are not always easy to consult when they do exist. It may well be that the estimated figures for the rural parishes are close to the truth - it would be much more difficult for a parish priest to keep detailed records in the harbourside towns which were not only growing rapidly, but also housed a large number of itinerants.

Another possible source of error is that the documents from which we draw the population data today are, in many ways, secondary sources. We do not possess the enumerators' reports, although these may well exist in Sicilian archives, and there are a number of inconsistencies in the copies which are available today. The figures for 1590, 1614 and 1617 appear to be fairly soundly documented. Later estimates, except for 1632, only exist as lists and we are not given any information on how they were compiled. The figure for 1632 may have been deliberately inflated and there are several discrepancies in the totals given for individual settlements in the various sources.

The period between 1571 and 1633 saw the creation of 17 new parishes on Malta (this incidentally is evidence in itself of rapid population growth) and it is just possible that some persons were included in the counts of more than one parish, if some confusion arose as to the limits of the new parochial units.

The estimates are not always consistent in the groups of the population which they include. Sometimes members of the Order, men on the galleys and slaves were included, sometimes not. When comparisons between such figures are made adjustments are necessary and this, too, is a source of error.

In spite of these strictures the trend of the statistics is consistent and provides evidence of very rapid increases in population in the late sixteenth century and the first half of the seventeenth century. But we cannot place much reliance on the results of more detailed analysis, lest the basic data prove to be inaccurate.

Fig. 5:2 - Population of the Maltese Islands 1530 - 1798.

POPULATION OF THE MALTESE ISLANDS 1530-1798



Population Trends 1530 - 1798.

When the Order came to the Maltese islands it was generally assumed that the local population numbered somewhere in the region of 20,000. According to the Abbe de Vertot¹ the Order's commission of 1528 had reported a population of 17,000 and Quintinus² gives a figure of 20,000 Maltese at the time when the Order arrived. A commentary on the population estimate made in 1590 states that there were 18,000 local inhabitants in 1530.³ In no case is the basis of the estimate given.

With the garrisoning of the Island by the Order the population was increased. There were only a few hundred Knights of St. John and many of these lived on the Order's European estates but those who came to Malta were accompanied by many soldiers and followers - these last included a number of Rhodians, who left that island when the Order was forced to withdraw. In all some two to three thousand persons were added to the population. This non-Maltese section of the community grew in the succeeding years, as the Order built up its organization and military strength.

From 1530. until the end of the sixteenth century the fluctuations in population numbers are exceedingly complex and it is impossible to trace their numerical extent with any accuracy. When the Order arrived there were a good many people living outside the Island who, had conditions not been so hazardous, would have resided on Malta. Perhaps, with

1.c.

1. The History of the Knights of Malta, English Translation, London, 1728.
2. Fra J. Quintinus, Insulae Melitae Descriptio, Lyons, 1536.
3. Università No. 1, f.187.

the coming of the Knights, and more secure times, there was some re-migration from within this group?

The Order soon created a demand for labour and when they initiated a fortress expansion programme, in the early fifteen-fifties, labourers had to be imported from Sicily.¹ As the labour market remained good for many years after this a number of Sicilians may have settled permanently.

Between 1530 and 1550 the population of Malta was probably growing under the stimulus and protection of the Order. However, in 1551, Dragut Reis led a Turkish reconnaissance in strength against the islands, burned the crops in the area around Qormi and Birkirkara and carried off several thousand persons from Gozo.² By this time it was clear that the Turks would attempt to capture Malta - many people with the means removed to Sicily and, because of the lack of locally grown food supplies, the Order encouraged the migration of non-combatants. In 1551 all such persons were ordered to Sicily³ and, in 1552, 3,000 non-combatants are reported to have left the Island.⁴ In the year before the Siege, 1564, some women and children were shipped out to Sicily.⁵

In this patchwork of uncertainty it is impossible to make any suggestions on the size and trends of population. We are uncertain of the number of Maltese in 1530, we do not really know how many persons

1. Bosio, op. cit. 1602, P.323.

2. Ibid. p.296.

3. A.O.M. 88, f.115.

4. Bosio, op. cit. 1602, p.255.

5. A.O.M. 91, f.139v.

arrived with the Order. Nor do we know how many Sicilians settled in Malta to take advantage of the demand for labour. Likewise we have no real knowledge of the number of inhabitants who left prior to the Siege, the numbers killed during it, or how many came back after it. Bosio¹ states that the population in 1566 was 20,000 but it is difficult to place any reliance on an estimate made in such chaotic times.

After the Siege a well marked increase in population developed. The building of Valletta absorbed vast numbers of labourers and masons. For many years there were probably three or four thousand labourers employed and at the peak of activity approximately 8,000 were engaged on the works.² A chronic labour shortage developed³ and workmen were imported⁴ from Sicily and Calabria,⁵ whilst a large number of Maltese returned to take advantage of the new conditions.

In the years succeeding the Siege the Order were anxious to see the population grow in numbers and, with land returning to cultivation together with the liberal outlook of the Sicilian authorities, regarding the *tratte*, in these times of stress, the extent to which the population had grown was partially disguised.

When the results of the 1590 enumeration were made known it was apparent that the Maltese section of the community alone was approximately 10,000 in excess of the 1530 figure. The Sicilians were warned⁶ that

1. Bosio, op. cit. 1602, p.776.

2. Ibid. P.781.

3. A.O.M. 431, Lib. Bull. 1565-67, f.256v.

4. Ibid. f.268.

5. Bosio, op. cit. 1602, p.778.

6. Università No. 1, f.187.

unless the 'tratte' was increased there would be death by famine during the following year. In the event the whole region suffered poor harvests and severe scarcity and population growth in Malta was checked by the famine of 1591. The Order, as the Maltese started to die of hunger,¹ thought of sending part of the population to Sicily but the plight of that island was no better and famine continued into the following year, when plague broke out as well. Del Pozzo² gives the total number of deaths due to famine and plague as 800.

Conditions did not improve quickly and the same authority³ records that by 1595 many Maltese had left the Island.

This was only a temporary stall and a rapid rate of population growth was quickly resumed. The estimate of population made in 1614⁴ together with the one taken just under three years later, in 1617, reveal an extremely rapid rate of growth.

1. Del Pozzo, Storia di Malta, Venezia, 1715, p.328.
Del Pozzo had access to the archives of the Order and continued its history from the point where Bosio stopped - 1571.
2. Ibid. p.340.
3. Ibid. p.370.
4. 'Descrittione del Popolo dell'Isole di Malta, e Gozo fatta l'anno 1614,' A.O.M. 6385, ff. 120-121.
Another copy exists in Università No. 2, f.40. There are no discrepancies between the two.

1590 - 32,290 inhabitants of Malta and Gozo together
with the Order, slaves and those on the galleys.

1614 - 41,084 inhabitants of Malta and Gozo, slaves and men on
galleys but excluding men in the Order (probably
not exceeding 400).

1617 - 43,798 - ditto -

1632 - 56,100 inhabitants of Malta and Gozo, members of the
Order, slaves and men on the galleys.

This rapid increase in population has been questioned.¹ The crux on
the question is - could the population have increased by some 9,000,
from approximately 32,000 to 41,000, in the twenty years between 1594
(the end of the plague - famine years) and 1614?

If we confine the argument to the local inhabitants, excluding
members of the Order and their followers the figures become, approx-
imately 28,000 and 38,000 respectively. The increase is possible if
births exceed deaths by 15 per thousand each year, in other words an
annual rate of increase of 1½%. The increase between 1614 and 1617 could
be accounted for by an annual rate of increase slightly in excess of 2%.
An increase of 2% p.a. would account for growth between 1617 and 1632.

However, the problem does not have to be viewed only in these terms.
Of the 12,000 increase which took place between 1590 and 1617, approx-
imately half can be accounted for in the harbour towns (Valletta, Birgu,
Senglea, Bormla increased from 8,856 to 18,691, between 1590 and 1617.)

1. Richardson, op. cit. M.B.D, 1961, p.135.

The first figure ~~did~~ not include slaves and men on the galleys, the second figure does. 2,500 has been added to the first figure to compensate. At Valletta alone, the increase was in the region of five thousand persons. In the space of 45 years, from 1571 to 1614, Valletta became the largest settlement on the Island with a population, including members of the Order, of eleven and a half thousand. Much of this increase was derived from external sources.

Evidence already quoted shows there was considerable movement of labour between Sicily and Malta. Many Maltese and Sicilians obviously moved in and out of the Island as the labour market fluctuated, or as other opportunities were offered. For instance the 1617 estimate¹ points out that many Maltese had gone to live in Sicily, particularly on the south coast, to farm uncultivated land, whilst others had found work on the Sicilian and Neapolitan galleys.

There was certainly some migration of craftsmen into the Island. In 1625² two German 'diamantari' petitioned the Grand Master that they might be allowed to practise their craft on the Island. And in 1632³ there is a reference to a group of Dutchmen who had settlement in Malta to supply the Order with various military stores. Of more importance, in terms of numbers, was the influx of Italians and Sicilians. Reading through supplications to the Grand Master one is struck by the large number of persons, with Italian names which no longer exist on the Island, living in the harbour towns. Equally striking is the preponderance of Maltese

1. A.O.M. 6385, f.126.
2. A.O.M. 1183, f.189.
3. A.O.M. 1184, f.29.

names in the country areas where the native stock was little altered by the influx of migrants.

At the turn of the century the 'corso' was becoming established, as we shall see it developed into one of Malta's principal industries, and this resulted in an influx of ships and crews into the Island, besides providing home based work for Maltese employed in foreign shipping.

Economically the Island was outstripping Sicily and it may well have been that as Malta became increasingly prosperous there was a flow of migrants, and re-migrants, from the larger Island.

The 1632 Estimate of Population.

The size of this estimate suggests that the rate of population growth, established since 1594, continued but the figure is of doubtful value.

On the graph of population growth for the whole Island it appears as a peak followed by a decline. This pattern is accentuated on the graphs for individual, rural, settlements. This decline is not easy to explain - there are two possible reasons. Firstly the 1658 figure may be too low. The heading for the document is obscure but it appears to be a census of all those people under the jurisdiction of the Bishop of Malta. How many were not, apart from members of the Order, is difficult to say. However, the 1670 figure supports the one for 1658. Secondly, there was a considerable, and prolonged, grain shortage in the late sixteen-forties and fifties. But there is, as yet, no evidence to suggest large numbers of deaths by famine.

The Estimates of 1658, 1670, 1680.

The figures for these years are obtained from lists which give little information but the numbers living in each settlement. It is difficult to place much reliance upon them without further documentation.

The number of inhabitants killed by the plague of 1676¹ is in doubt but it ran into many thousands. Del Pozzo² states that a memorandum, then in the Chancellory of the Order, gave the number of dead as 8,569. He also gives another estimate of 11,300 and breaks this down into its component elements.

Number of dead in Valletta	4,000
Number of dead in Borgo (Birgu)	1,800
Number of dead in Senglea	2,000
Number of dead in Bormla	1,500
Number of dead in rural areas	2,000

These are obviously rounded estimates and the figures for the four towns are all too high when compared with the total numbers living in these towns in 1670 and 1680.

Eighteenth Century Estimates.

An estimate of population is believed to have been taken in 1741. It is referred to by various authorities but the writer has been unable to trace the original document. The total population was reputed to be 110,000, an estimate which may have been swelled to feed illusions of grandeur. Clantar gives the population of Malta as 66,800 in 1760.

Richardson³ established the early nineteenth century population growth

1. A.O.M. 262, f.55v.

2. op. cit. 1715, p.449.

3. M.B.D., p.134.

rate and then back projected it to 1530. The figure for 1760 lies fairly close to the projected total. Richardson's observations on the sixteenth and seventeenth century totals are handicapped by his being unaware of many of the population estimates.

Conclusions.

It seems that, in detail, the estimates of population compiled during the rule of the Order are unreliable in parts but provide evidence of a strong upsurge in numbers, which is corroborated elsewhere, during the latter part of the sixteenth century and the early decades of the seventeenth. This is just what would be expected as a backward country was developed into a base for military operations and became integrated with the more prosperous sections of European society.

Periodically population growth was checked by war, famine and disease.

After the first few decades of the seventeenth century the rate of population increase slowed. The Order's demands for labour, whilst increasing, increased at a much steadier rate. The famine and plague, which visited the Island towards the middle of the century checked population increase sharply. The fact that the Island imported so much food and was so crowded contributed to the efficacy of these checks.

Population growth in Urban and Rural areas.

This growth pattern did not characterise all parts of the Island. The most buoyant feature was the growth of the urban population. The rural population apparently grew quickly, as well - but not as quickly.

By 1632 the curve of rural population is beginning to flatten whilst urban growth slows very little. This trend is borne out by evidence obtained from the 'supplique'. It is clear that, in the early seventeenth century, there were a considerable number of poor, landless, families in the rural areas and that conditions were not easy for many.

The effects of the plague (1676) were not so marked in the country areas. By contrast the effects of famine may well have been greater - the towns having first call on imported supplies.

The evidence of the Naxxar 'status animarum' suggests, that in the late seventeenth and early eighteenth centuries, rural population was increasing very slowly. After increasing quickly until 1632, urban population assumed a slower growth rate. Probably a lack of building land contributed to this.

The numbers in Senglea, Vittoriosa, Bormla and Valletta were sharply reduced by the plague of 1676 but afterwards, in contrast to the rural areas, growth was quickly resumed and in the eighteenth century new urban areas had to be built. It is impossible to say whether these increases were generated internally or were attained by attracting people from rural areas. If the latter is the case it may account to some degree for the slow rate of rural increase. Perhaps this type of analysis, on such suspect evidence, is attempting too much? But it is only by attempting analysis that the weaknesses and inconsistencies in the figures can be exposed.

The overall picture of population growth just portrayed is what would

be expected from all the other evidence relating to economic conditions and population growth. The economic policy of the Order reflects the need to provide work for a growing population and in the formulation of this policy there are numerous references to overpopulation and the problems it creates.

Richardson¹ suggests that the population of Malta and Gozo was in the region of 90,000 when the Order left in 1789. He comments, assuming a population of 25,000 in 1530, that this represents an increase of growth of one per cent per annum. He then states that this increase took place "while much of the rest of Europe had static or declining numbers until the eighteenth century". This is an over simplification for large European, urban areas, particularly capitals, continued to grow during this period and Malta was, in many respects, a city state and the capital of a domain that spread all over Europe. The Island is a special case and much of the population growth was financed, and indeed came, from other areas.

1. op. cit. p.135.

SUMMARY OF EVIDENCE RELATING TO POPULATION.

- 1575 - Whilst not giving a total population for the Island
Duzzina lists the numbers living in several towns and
villages. This evidence has been collected by Cassar-
Pullicino, op. cit. 1956, p.24.
- 1590 - Malta 27,000. Gozo 1,864.
Total with members of the Order, soldiers, etc, 32,000
Bosio, op. cit. 1602, p.93.
Università No. 1, ff.187-188.
Università No. 2, f. 39.
- 1614 - Malta 38,429. Gozo 2,655.
(August - Nov.) These figures include soldiers, slaves, etc.
but not members of the Order. 41,084
A.O.M. 6385, f.120-121.
Università No. 2, f.40.
R.M.L. 670, ff.6-7.
- 1617 - Malta 40,963. Gozo 2,835.
(August) Figures as last. Total excluding members of Order. 43,798
A.O.M. 6385, ff.123-128v.
Università No. 2, f.40.
R.M.L. 670, ff.1-5.

- 1632 - Malta 50,135 Gozo 1,617.
621 Members of Order.
3,080 officials, soldiers, slaves.
649 slaves in private ownership. 56,100
Universita` No. 2, f.108.
R.M.L. 162, ff.125-127.
- 1658 - "Roll of all souls under the protection
of the Bishop of Malta and Gozo."
Malta 45,688. Gozo 3,923.
Persons in convents and monasteries 482, 50,079
Universita` No. 2, f.165.
- 1670 - Malta 44,290 Gozo 6,500.
Not including members of the Order, etc. 50,790
Universita` No. 2, f.213.
- 1680 - Malta 43,800 Gozo 5,700.
Not including members of the Order, etc. 49,700
Universita` No. 2, f.246.

CHAPTER VI

THE EVOLUTION OF THE SETTLEMENT PATTERN.

The rapid growth of population, described in the last chapter, was reflected in changes in the structure of the settlement pattern which the Order found on arrival.

The Medieval Settlement Pattern.

The origins of Maltese settlements, which pre-date the Order, are obscure and, in the majority of cases, it is impossible to assign them, even in general terms, to any particular period. Mdina certainly owes much to the Romans but it is probable that the town had an earlier origin. The Arabs are credited with the foundation of the 'castello a mare', today Fort St. Angelo, and Vittoriosa probably post-dates the fortress. This information is sketchy and even less is known about the origins of the pre-1530 rural settlement pattern. Several Arab writers referring to the period 870 A.D. to 1090 A.D. mention the existence of villages on Malta but this is too imprecise to be of much use.

Even place-name evidence is of little help at present. Nearly all the villages which existed in the Middle Ages have names which are basically Arabic and whilst some have Romance titles as well Aquilina¹ is convinced that these are later importations and none pre-date the Arab conquest.

Saydon² takes a different view claiming to find pre-Arab, Low Latin, elements in the Island's place-names. Aquilina has refuted much of the evidence presented by Saydon.

1. J.Aquilina, 'A Survey of the Constituent elements of Maltese,' Papers in Maltese Linguistics, Malta, 1961.
2. P.P.Saydon, 'Pre-Arabic Latin element in Maltese Toponymy,' Orbis, Tom V, No. 1, 1956.

However, advances are being made in the study of the origins and relative age of Maltese place-names, Aquilina has suggested that, prior to the Arab domination, the inhabitants of Malta spoke a language of Punic origin and he is beginning to recognise such elements in local toponymy.¹

It is possible that as our knowledge of the evolution of the Maltese language increases we shall become better informed on the origin and relative age of place-names. Aquilina has already suggested that the word 'Hal', meaning village, which prefixes many Maltese settlement names, but is absent from others, may have chronological significance. There does seem to be a reasonable correlation between the older villages and Hal prefixes.²

Prior to the fifteenth century there are only occasional references to individual settlements in documents of the thirteenth and fourteenth centuries. It is not until 1436, with the erection of ten parishes on the Island, that we have a list of all major settlements and their satellites. Even this source is not unimpeachable as the original document no longer exists and we have to draw upon retailers. Ferres³ gives the following information on the composition of the parishes in 1436.

1. J.Aquilina, 'Influenze arabe sulla toponomastica Maltese,' VII Congresso Internaz. di Scienze Onomastiche, Florence, 1961, p.135.
2. Ibid. p. 137.
3. A.Ferres, Storia Ecclesiastica di Malta, Malta, 1877, pp.138-9.

MATRICE

Church of the Nativity in the
territory of Maxxar

The Church of Sant'Elena
(Birkirkara)

Birmiftuħ

del/n The Church of St. George in
the territory of Qormi

Santa Caterina in the
territory of Żejtun

Santa Caterina in the
territory of Żurrieq

St. Nicholas in the
territory of Siggiewi

San Filippo in the
territory of Żebbuġ

Santa Maria at Mellieħa

Santa Domenica at Tartarni

DAUGHTER SETTLEMENTS

Għargħur, Mosta

Lia, Balzan, Attard,
Bordi, Manna.

Gudia, Luca, Tarxien, Kirkop,
Mquabba, Farruġ.

Bisbut, Żabbar, Asciach,
Għuam

Qrendi, Leu, Millieri, Manin,
Bubakra, Far.

Cbir, Xluch, Kdieri,

Musci, Duin, Mule (Forres comments
that this village had been abandoned
by the seventeenth century)

Dingli

It will be noticed that, in many cases, the church is simply described as being within the parish and there is no indication whether or not a nucleated settlement exists. At Birmiftuħ, for instance, it seems fairly certain that an isolated chapel existed, serving as a mother church for the lands around. This may be evidence of a greater degree of dispersion of settlement in the fifteenth century.

By 1436 the settlement pattern was already beginning to show the effects of the frequent depredations which the Island suffered and from

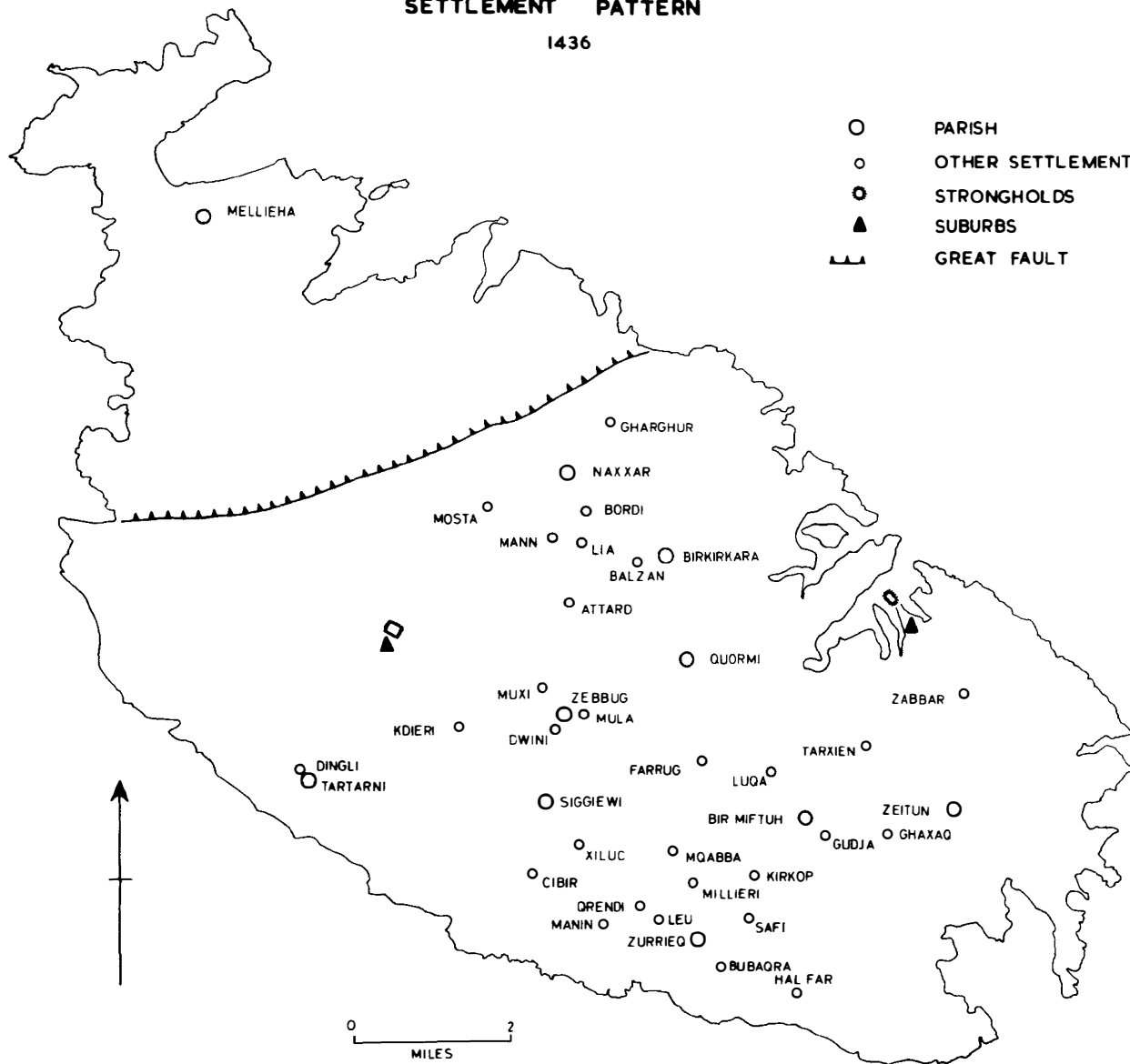
Fig. 6:1 - Distribution of Settlement in 1436.

Source - Ferres, op. cit. 1877.

SETTLEMENT PATTERN

1436

- PARISH
- OTHER SETTLEMENT
- STRONGHOLDS
- ▲ SUBURBS
- GREAT FAULT



this time, until the decades following the Siege, it contracted.

In 1575 a papal commissioner visited the Island to report upon ecclesiastical organisation.¹ He visited every parish, settlement and church on the Island and a useful comparison can be made between the picture of settlement distribution, which emerges from this visitation, and the pattern of 1436. Two of the original ten parishes have become defunct by 1575. Mellieħa (M.R. 4279) was probably abandoned shortly after 1436 and Duzzina² states that abandonment took place as a result of the exposed position of the village and the incursions of corsairs. Tartarni, also, had declined but the reasons for this are obscure. Early in the sixteenth century it was shorn of parish status,³ although it is doubtful if it was completely abandoned at this time. Neither parish was represented at an important meeting of the 'Consiglio Popolare' in 1472 when the remaining eight rural parishes sent members.⁴

Ferres mentions, but does not document, a number of similar stories -
 1. c. the abandoning of the Church of Sant'Elena, which lay too close to the sea, by the parishioners of Birkirkara and the moving of the inhabitants of Raħal Niclusi to a new village site, further inland, which became Siggiewi.⁵

Clearly many smaller settlements also succumbed during this period and there is a great deal of place-name evidence which can be used in support of this conjecture. The names of Maltese rural settlements are frequently
 1. c. prefixed by the word 'Hal'. In medieval, sixteenth and seventeenth century
 1. c. documents the word often takes the form 'Raħal'.

1. R.M.L. 643.

2. Ibid pp.322-3.

3. Ferres, op. cit. 1877, p.141.

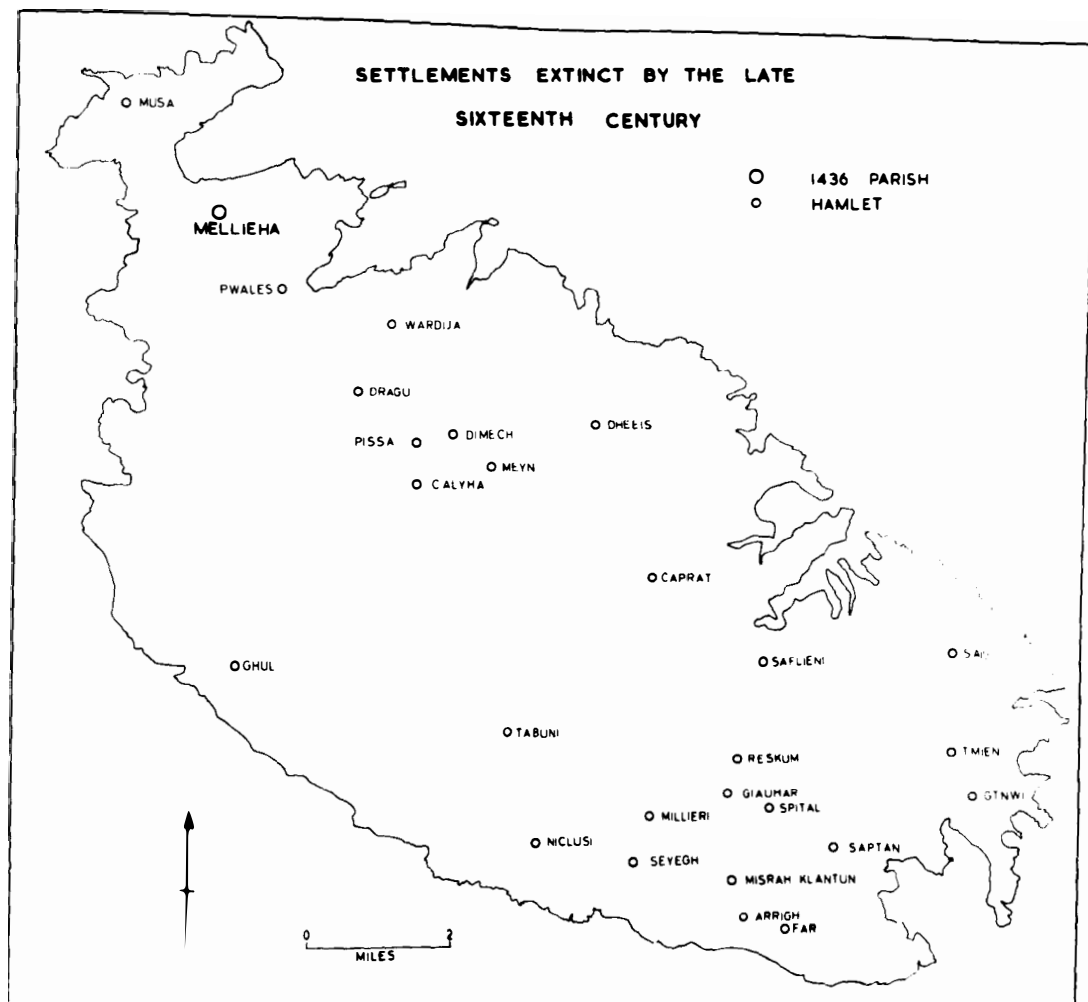
4. R.M.L. 11, f.228v. published by E.R.Leopardi, M.H, vol.2. 1959, p.254.

5. Ferres, op. cit. 1877, p.141.

Fig. 6:2 - Settlements extinct by the late Sixteenth Century.

SETTLEMENTS EXTINCT BY THE LATE SIXTEENTH CENTURY

- 1436 PARISH
- HAMLET



A distribution map has been constructed of all the Hal names mentioned in the seventeenth century, or earlier, but which were known to be unoccupied in that century. Abela, alone, lists twenty-two Hal names which he recognised as former settlement sites.

Two features stand out on this map.

- a) The predominantly near coastal distribution of abandoned settlements in the south and east of the Island.
- b) The relatively large number of Hals abandoned in the lands lying near and to the north and west of the Great Fault.

A reservation should be made about this place-name evidence. We know the range of settlement types to which Hal is prefixed today but we do not know that it was similarly definitive in the Middle Ages. There is some evidence to suggest that Hal, besides being applied to the larger settlements, was also attached to very small groups of houses.

The troubles of the late Middle Ages were not the only causes of abandonment and the Great Siege almost certainly gave rise to another crop of 'lost villages.' The plague of the early fifteen-nineties may have accounted for at least one small settlement - Kideri.¹ However, the censuses for 1614 and 1617 both mention a "quideri" - which may well be the same village.

The map showing the distribution of the 'casals' (Maltese for a village) in 1575 displays the following features.

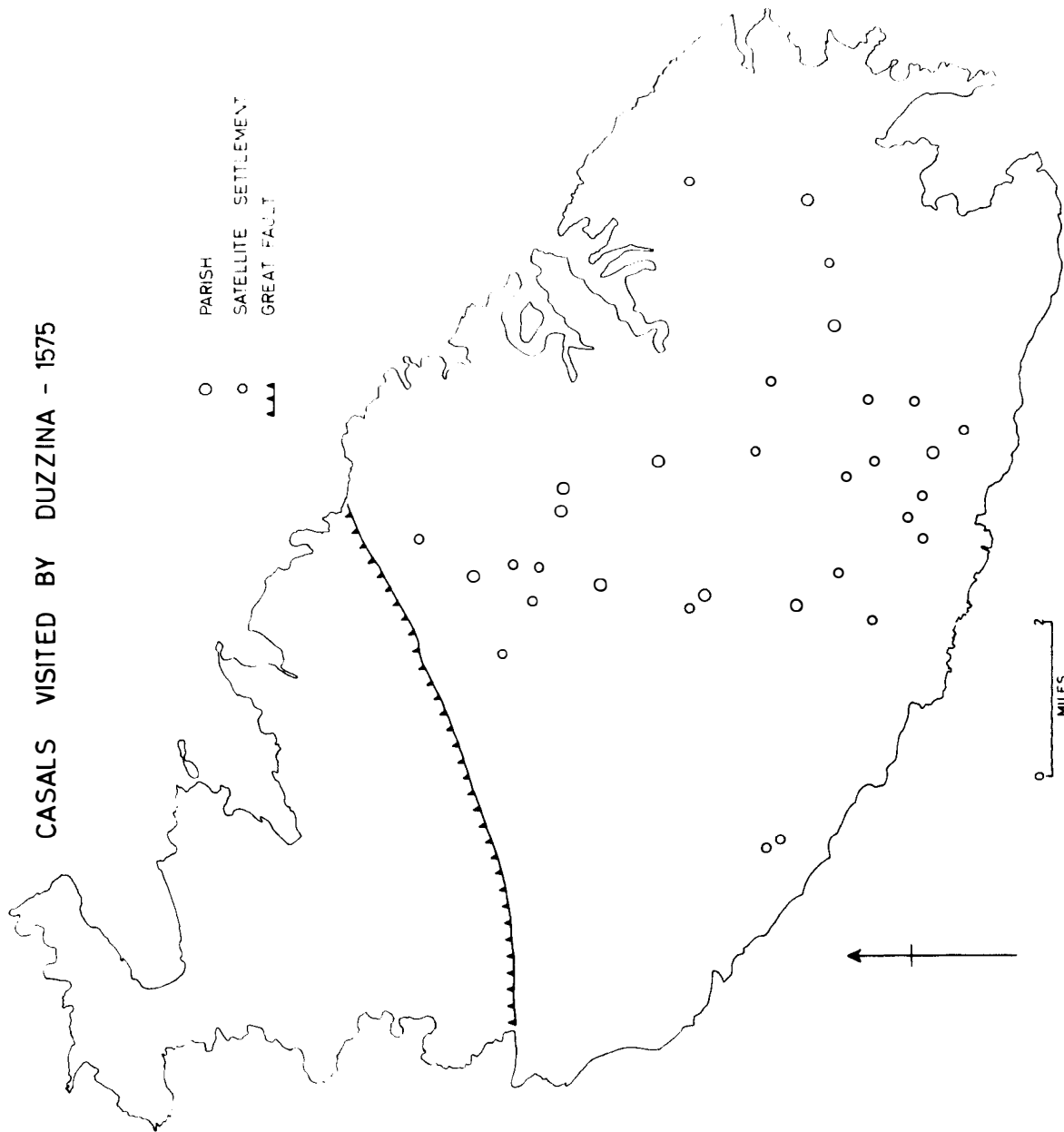
- a) Very few settlements are in proximity to the coasts, the majority of the casals being concentrated in a

1. Abela, op. cit. 1647, p.369.

Fig. 6:3 - Casals visited by Duzzina - 1575.

CASALS VISITED BY DUZZINA - 1575

- PARISH
- SATELLITE SETTLEMENT
- ▲▲▲ GREAT FAULT



central crescent, orientated to avoid such situations.

There are large lacunae in the settlement pattern near the most suitable anchorages - Marsaxlokk, (M.R. 5864), Marsamxett, Marsascala, (M.R. 6069) and ^{the} Grand Harbour. In the last case the fortified settlement is an exception.

- b) The relative emptiness of the Rabat - Dingli plateau is partly a result of the attraction of Mdina - Rabat and partly due to differing physical conditions.
- c) The complete lack of nucleated settlement to the north and west of the Great Fault.

Three features dominate the changes to the settlement which took place under the Order.

- a) The increase in size of the settlements occupying the Island's Heartland.
 - b) The continued reluctance to occupy the coasts and the north-west.
 - c) The foundation and rapid growth of a group of new settlements adjacent to the harbours.
- a) The Growth of the Heartland Settlements.

During the rule of the Order settlement, within this area, expanded and yet, concentrated. In 1570 there were only eight rural parishes, all of which centred on settlements within the Heartland - ^{del/u} ~~Qormi~~, Birkirkara, Maxxar, Siggiewi, Żebbuġ, Żurrieq, Birmiftūh and Żejtun. Ecclesiastical jurisdiction over the north and west was shared by Mdina and Maxxar. In the

central crescent, orientated to avoid such situations.

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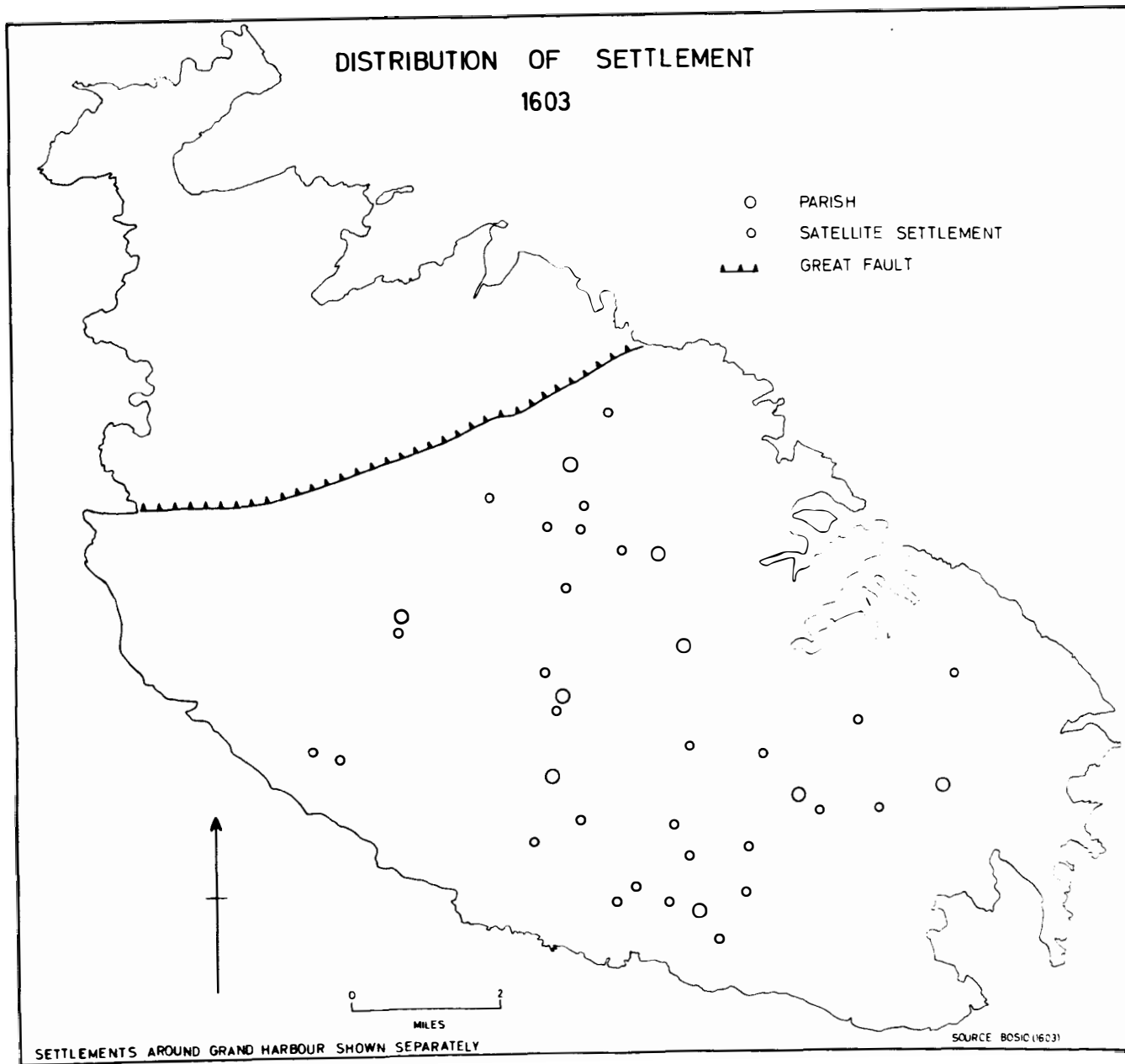
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Fig. 6:4 - Distribution of settlement 1603.

DISTRIBUTION OF SETTLEMENT 1603

- PARISH
- SATELLITE SETTLEMENT
- ▲▲▲ GREAT FAULT



SETTLEMENTS AROUND GRAND HARBOUR SHOWN SEPARATELY

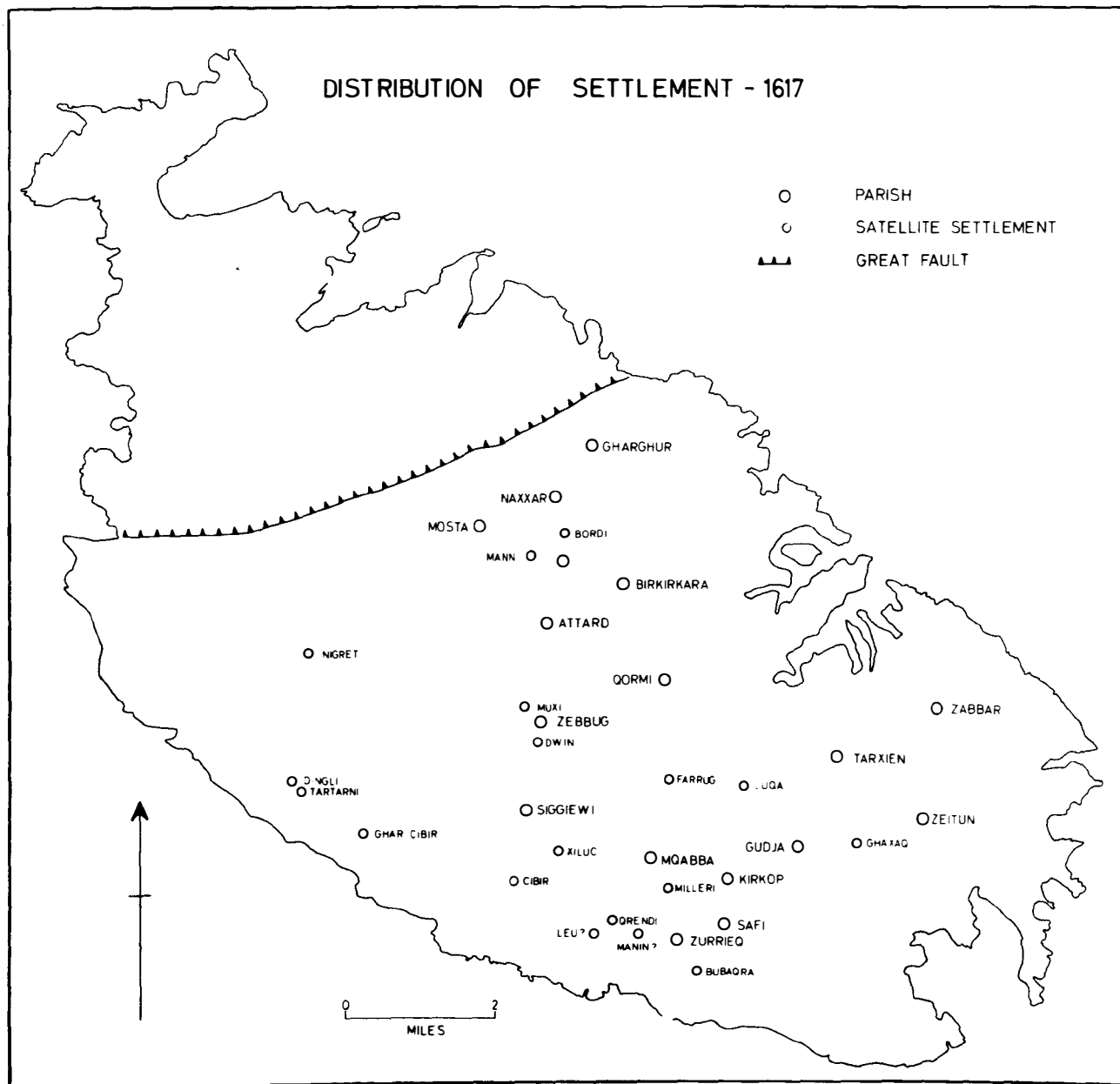
SOURCE BOSIC (1603)

Fig. 6:5 - Distribution of settlement 1617.

Source: A.O.M. 6385.

DISTRIBUTION OF SETTLEMENT - 1617

- PARISH
- ◌ SATELLITE SETTLEMENT
- ▲▲▲ GREAT FAULT



next forty years a large number of former satellite settlements were elevated to parish status. The increase in the number of parishes reflected not only an ecclesiastical reorganisation but the growth of the population. After this spate of parish creation only two other villages - Dingli (1678) and Balzan (1655) - were elevated in status during the Order's rule.

The growth in size of settlements was not uniform and some casals found themselves better placed than others in relation to the new factors which were governing the Island's economic life and population growth.

del Qormi (M.R. 5270) was well juxtaposed to both groups of harbourside towns - those developing around Galley Creek, which lay between Vittoriosa and Senglea - and those ^{on} Sceberras peninsula, particularly the latter. There was a large demand for vegetables in Valletta and with irrigation water available at not too great a depth, the land-use patterns around the village soon began to reflect the market potential of the capital - just as they do today. A large number of bakeries were set up here,¹ again under the influence of the nearby market and a number of allied confectionery trades developed. The village became known as "qasal Forni" and is still the largest centre of the baking industry in Malta.²

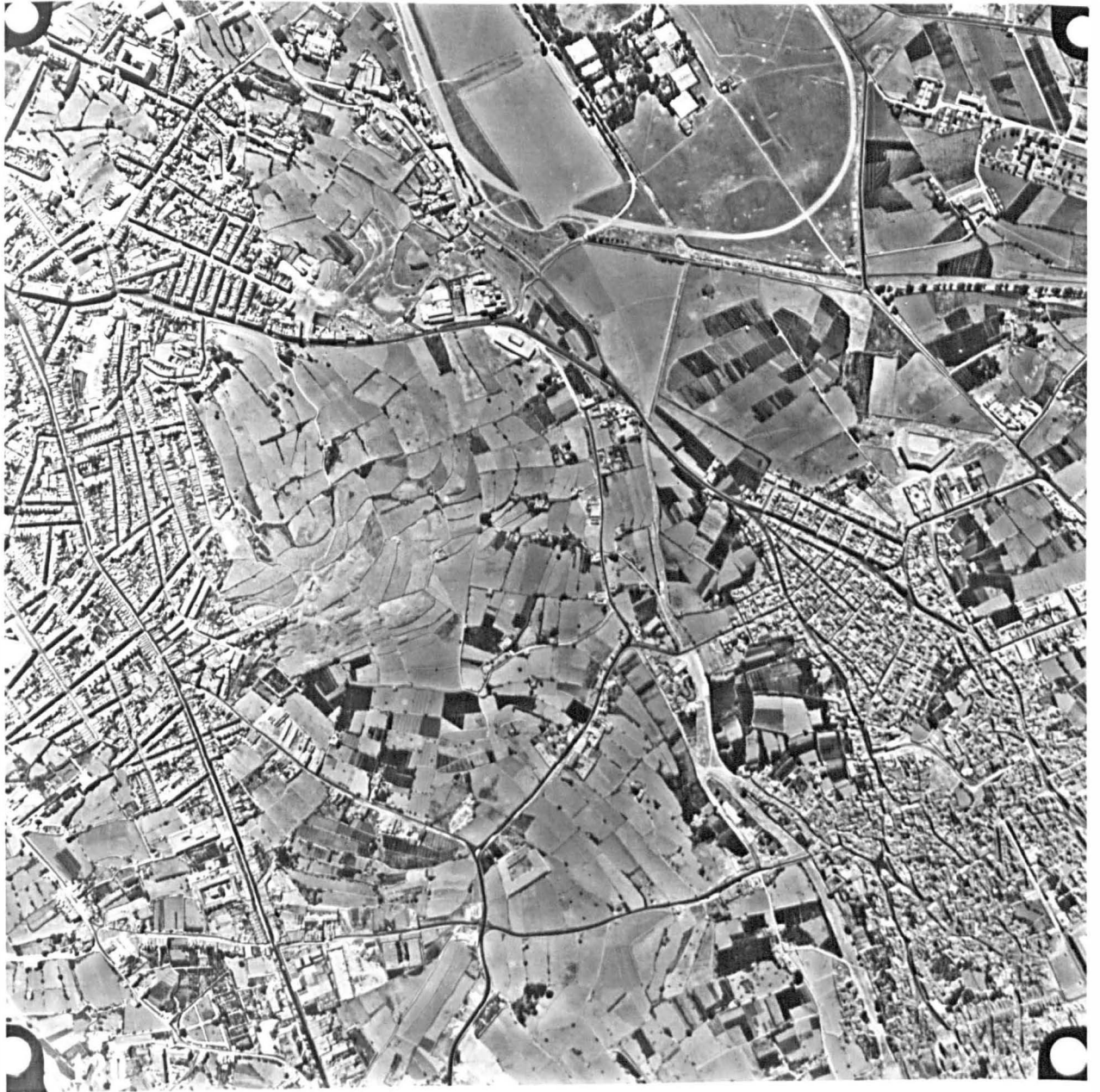
cap. Likewise the settlement was well placed to supply the labour demands of the capital and port. The village reflected the prosperity and importance derived from these activities in its buildings, many of which still survive today and are on a scale considerably more lavish than the

1. Abela, op. cit. 1647, p.92.
2. M.B.D, p. 182.

Fig. 6:6 - Air photograph (1957) of the Marsa and Qormi. The geometrical streets lying close to the Marsa are the result of a planned seventeenth century extension to the village.

Notice the large number of 'giardini' close to Qormi.

The settlement occupying the left hand border of the photograph is the nineteenth century village of Hamrun.



norm for rural Malta. The Palazzo Stagno built in 1589¹ is an outstanding example.

The population of the village grew so rapidly that, around the middle of the seventeenth century, the Order laid out a number of streets, at the eastern end of the casal, and leased house sites.² These planned geometrical streets stand out on the map today in contrast to the chaotic, jumbled plan of the older part of the casal.

The neighbouring settlement of Birkirkara (M.R. 5172) also grew quickly and budded off three daughter parishes, based on the casals of Attard (1575), Lia (1594) and Balzan (1655) - none of which, according to the population estimates, increased much in size. The parent continued to grow swiftly and this is a fairly general feature of settlement growth. The big casals got bigger whilst the daughter parishes, in general, remained static or, at best, grew very slowly, some even declined. There appears to have been a relationship between size and the possibility of a settlement incrementing its population. Only in cases where special factors were operating was this relationship overridden.

The relationship could be stated as follows, starting from a basis of the 1614 population figures or, where a settlement is not listed at that time, the 1632 totals.

Any casal with less than two hundred inhabitants subsequently became extinct. There is one exception - Paula (M.R. 5570) (population 170 in 1632) - ^a settlement deliberately created in 1628 to relieve pressure on the

1. Quentin Hughes, The Building of Malta, 1530 - 1798, 1956, p.162.
2. Treas. B. 289, plans.

**Fig. 6:7 - A manuscript plan, Eighteenth Century, of
the Qormi extension mentioned in 6:6.**



Treas. B. 290.

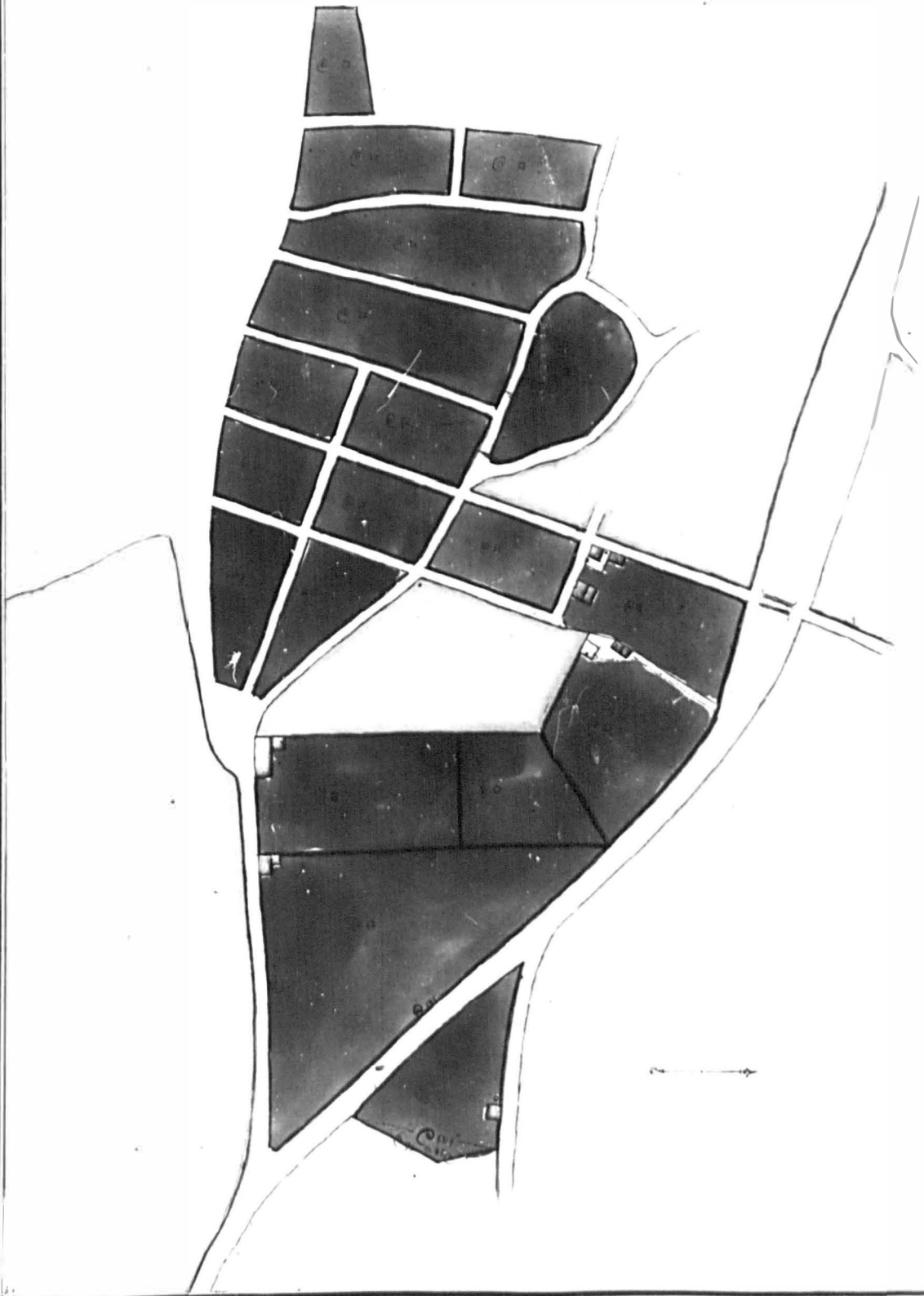


Fig. 6:8 - The villages of Balzan (top) and Lia together with the villa of San Antonio. Notice the large number of 'giardini' in Lia.

The grid iron extension to Balzan is twentieth century as indicated by the width of the streets and the splayed fronts of buildings occupying corner sites.

The capillary pattern, which predominates i.e. in the older parts of Casals, is well shown at Balzan.



harbour towns and inducements were offered to attract inhabitants.

Villages with populations between two and three hundred either became extinct or declined in size.

Villages with between three hundred and one thousand inhabitants remained static or increased slowly in numbers. There are two exceptions due to special conditions - Tarxien and Żabbar.

Tarxien (M.R. 5669) (created a parish in 1592) apparently grew but much of the increase was due to the foundation of Paula within the parish. The casal was also well placed with regard to the harbour towns.

Żabbar (M.R. 5870) (1615) displays a very rapid rate of growth as a result of its proximity to the Three Cities (Vittoriosa, Senglea, Bormla).

Mosta (M.R. 4874) (1608) grew quickly enough to overtake the parent parish in numbers of inhabitants. This growth was due to the Order granting a large number of building sites near to the village. Naxxar (M.R. 4974) was also affected by this process although not to the same degree. Għargħur (M.R. 5075) (1610), Dingli (M.R. 4468), Attard (M.R. 4972), Lia (M.R. 5073), Kirkop (M.R. 5366) (1592), Safi (M.R. 5365) (1598), Mgabba (M.R. 5267) (1598) and Luqa (M.R. 5368) (1633) all remained fairly static in numbers.

What this in fact means is that most of the settlements based on the old, rural, pre-Order, parish centres were the ones which displayed a high rate of growth. There were exceptions. Siggiewi (M.R. 4968), with its satellites Kbir, Kdieri, Xiluc, all of which became extinct, increased very slowly in numbers and this was probably a reflection of the rather

isolated position of the settlement.

None of the small rural settlements, Tartarni (M.R. 443683?), Nigret, Ghar Kbir (M.R. 4567) and Dingli (M.R. 4468), in the parish which centred on Maina, flourished. The first three became extinct and Dingli, which attained parish status in 1678, remained static.

In 1612 the village of Nigret did not exist but, in that year, twenty-four people made a collective supplication to the Grand Master¹ asking for house sites, at "ta Negret et ta Salvator o siv chofra to lamp". The supplicants stated that they wished to create a casal on the then barren land. The Grand Master granted these requests and in the next ten years a further twenty-eight similar applications for house sites were approved. The plots given out were small, (usually 12 or 14 cannes square. A canne = 2.292 yards), just large enough for a family to build a house and create a small plot for cultivation from the rocky land. According to Abela² there were fifty-five houses in the village, containing two hundred and forty two inhabitants, by 1632. It will be noticed that there is a fairly good correlation between the number of successful petitioners for land at Nigret (52), traced so far, and the number of houses in the casal (55), in 1632.

The project was not a permanent success and in 1772 Ciantar³ recorded that the casal had diminished in size. The decline of the settlement, besides the obvious physical and economic causes, may be

1. A.O.M. 1182, f. 107.
2. op. cit. 1647, p. 80.
3. op. cit. p.266.

related to the revoking of many land grants around 1637.¹ We do not know the full effects of this action, certainly the Order's bailiffs knocked down walls and repossessed land, but frequently the grants were renewed on ^Arepetition to the authorities. It seems unlikely that these difficulties greatly damaged the village of Nigret, for Abela in 1647, describes an apparently flourishing settlement and there is no mention of decline or evictions.

This policy of the Order's, of granting house sites to poor families influenced the growth of other settlements in the area. At the end of the first decade of the seventeenth century a group of Dingli men petitioned for house sites,² probably near Deir il binet (M.R.444692) and there are references to similar grants in the same area.³ The Għar Kbir (the Great Cave), like Nigret, was associated with groups of poorer families. The cave may well have been inhabited right through the later Middle Ages, for there are many references to troglodytic dwellings during this period. The first references we have to it being inhabited, during the Order's rule, are early in the seventeenth century when a few small grants of land were made in the area.⁴ According to Abela there were 117 people living within the cave in 1632.⁵ There were probably several houses built nearby as well.⁶

1. A.O.M. 1184, f.176.

2. A.O.M. 1182, f.77.

3. Ibid. f.155.

4. A.O.M. 1182, f.5, f.42. A.O.M. 1183, f.102.

5. A similar figure is given by Padre A.Kircher who visited the Għar Kbir in 1637. At this time there were twenty-seven families living in the cave comprising 117 persons. Padre A.Kircher, Mundi Subterranei, Tom. II, Amsterdam, 1678, pp.119-120. Quoted by Cassar - Fullicino, M.H., vol. 3, 1961, p.33.

6. A.O.M. 1183, f.37, f.59.

The cave was still occupied in 1772.¹

The distribution of land grants (Fig. 4:4) for building obviously had a strong influence on the relative growth of settlements. Besides the casals already mentioned, together with Mosta and Naxxar, a large number of grants were made at Birkirkara and this helped to generate a rapid growth of population. A small number of grants were made in the Żurrieq area.

The medieval parish of Birmiftuħ (M.R.5467) splintered into six parochial units - Luqa, Tarxien, Gudja (M.R. 5567), Kirkop, Safi, Mqabba, none of which grew very much after 1632, except Tarxien which we have already discussed. The church at Birmiftuħ, which had served as mother church to the whole of the medieval parish remained isolated and no settlement grew up around it.

The neighbouring parish of Santa Caterina was divided into new parishes centred on the villages of Żejtun (M.R.5768), Għaxaq (M.R.5667) and Żabbar (M.R.5870). Population within these settlements grew rapidly probably due to the nearness of the Three Cities (Birgħa, Bormla and ~~Vittoriosa~~ ^{Senglea} ~~Vittoriosa~~) and the demands they made upon the adjoining countryside. Charlton² notes the existence, in the nineteenth century, of large herds of goats at Żejtun, Żabbar and Qormi, specifically to supply the needs of the harbour-side towns. The herds "used to travel there daily when door to door selling of raw milk 'on the hoof' was permitted". It is possible that a similar situation existed at an earlier date. Almost certainly Żabbar performed a dormitory function.

1. Ciantar, op. cit. p.265. It is probable that a number of other caves were also occupied at this time. Near the Għar Kbir is Għar Dakkuk (M.R.459668) which bears clear marks of a former habitation.
2. W.A.Charlton, Trends in the Economic Geography of Malta since 1800, Ph.D.thesis, Durham 1960, p.118.

del / u

The population figure given for the Santa Caterina group of settlements as a whole, in 1632, in R.M.L. 162¹ appear to be far too high and in fact it does not tally with the total given by Abela. Of the earlier figures, it can be said that the 1614 and 1617 totals do appear to reflect the Turkish raid of 1614,² when a landing was made at Marsacala and the territory around Zeitun pillaged.

Żebbuġ (M.R.4969) and Żurrieq (M.R. 5265), in spite of the distance they were away from the Island's economic heart, grew considerably in numbers of inhabitants. Both were important centres of the cotton industry. Żebbuġ lay on the 'strada antica,'³ which ran between Vittoriosa and Mdina, and had probably been an important cotton centre in the seventeenth,⁴ eighteenth and nineteenth centuries.⁵ Żurrieq, besides its interests in cotton,⁶ was one of the few settlements well situated to engage in fishing.

From the above it is clear why rural population growth was concentrated into a few settlements. Not only were the larger centres of population, by their nature, more likely to grow quickly but they were the centres of rural life, something more than villages, rather town villages. They were the centres of the various rural industries and some, like Qormi, also

1. op. cit. ff. 125-127.
2. A.O.M. 105, f.71v.
3. Treas. B.289, ff.19-20.
4. Abela, op. cit. 1647, p.88.
5. Charlton, op. cit. 1960, pp.186-188.
6. Abela, op. cit. p.102.

served as dormitory and manufacturing suburbs to the harbour towns. Many functioned as markets for the produce of the surrounding farmland and housed the middlemen who organised, and capitalised, much of the economic life of rural Malta.

The large casals were also the centres from which the Order organised the collective defence of the countryside and each of the eight, original rural, parishes had its capitan and contributed a body of men to the militia. The newer parishes, although they had attained ecclesiastical enfranchisement, were still subordinate in a military sense. In this context, above all else, the larger settlements were safer placed^s to live and during the period of the Order, until 1750, there were well founded and frequent fears of a large scale Turkish attack. In 1614 such an attack had been launched and no decade went by without strenuous preparations being made to resist invasion. Life in Malta was on a war footing. In such conditions security was worth a lot and outside the fortified towns the big casals were the safest places to live.

During the period of the Order "the church came to occupy a central place in village life."¹ As this process developed the larger villages became increasingly attractive as they could offer more ambitious religious ceremonies, festivals and buildings.

Thus the larger rural settlements were markets, centres of commerce, religion and defence. As such they outstripped the smaller casals which did not offer the same range of services.

1. B.W.Beeley, The Individual and Changing Rural Society of Malta, Ph.D. thesis, Durham University, 1960, p.50.

VILLAGES ABANDONED DURING THE SEVENTEENTH
AND EIGHTEENTH CENTURIES.

As we have already discussed it is clear that during the latter part of the Middle Ages and in the sixteenth century a large number of rural settlements were abandoned as a result of raiding and the Siege. It may well be, however, that other factors were bringing about abandonment as well, which were masked by the dominant forces. It is certain that abandonment went on after sixteen hundred and was then brought about by processes other than raiding. There is documentary evidence of the decline of, at least, thirteen casals since 1614. The factors contributing to the demise of this later group are complex and until additional documents come to light, which will enable us to reconstruct more fully the settlement pattern of the Middle Ages, it is impossible to be definite in our conclusions.

The predominantly coastal and peripheral distribution of settlements, abandoned before the close of the sixteenth century, obviously indicates the cause of their decline. But, primed by other forces, the settlement pattern may have already started to concentrate, whilst the selection of settlements for abandonment was determined on grounds of security and exposure. There are hints in the information given on the distribution of churches in 1436¹ that they were not necessarily surrounded by villages and may, in fact, have served a number of hamlets, or an area of even more dispersed settlement. The church at Birmifstun (M.R.5467) certainly

1. Perres, op. cit. 1877, p.138-9.

Fig. 6:2 - Settlements abandoned since c.1600.

SETTLEMENTS ABANDONED SINCE

c 1600

▲ EXTINCT SETTLEMENTS

MANN ▲

▲ BORDI?

▲ NIGRET

▲ KDIERI

▲ TARTARNI

▲ FARRUG

▲ GHAR KBIR

▲ GION?

▲ KBIR

▲ XILUC

▲ MILLIER

▲ MARNISI

MANIN ▲

▲ LEU



0 2
MILES

did this and today still stands in isolation. This may have been the case in other parishes. Cassar - Pullicino has found evidence of a similar nature in the report of Duzzina¹ and goes on to develop a theory, first propounded by Darmanin - Damajo,² that the Island's villages have grown as the result of the amalgamation of resources of a number of neighbouring small churches to enable them to build a more impressive edifice. The small churches disappeared and the population tended to move towards the new centre of religious life. The whole process being connected with the rise of the church to take the central place in Maltese village life. Amalgamation was seen as something far more widespread than the assimilation of smaller neighbouring settlements by the casals although there are a number of examples of this having taken place. Musselmet was incorporated within Naxxar³ and Varda within Attard⁴ just as Hal Musci and Hal Duin have been absorbed by Żebbuġ, at a later date.

Richardson⁵ has developed the Darmanin - Damajo theory and states that the disappearance of many villages "was broadly coincidental with the growth of the new parochial nuclei in the sixteenth and seventeenth centuries." He continues, "the cause seems to be related to the social conscience of a people who find their unity in the symbol of the Church."

1. 'Malta in 1575: Social Aspects of an Apostolic Visit,' M.H., vol.2, 1956, p. 27.
2. 'The Grand Harbour of Malta and its surroundings in 1530.' A series of articles in the Daily Malta Chronicle, January 1927.
3. Abela, op. cit. 1647, p.84.
4. Ibid. p.86.
5. Aspects of the Demography of Modern Malta, Ph.D, Durham University, 1960, p.246.

Cap.

Undoubtedly the church was a factor which gave certain settlements an added attraction but to attribute everything to ecclesiastical causes is an oversimplification, whether we are discussing the changes which took place in the late Middle Ages or during the rule of the Order.

Of Richardson's statement, on the later group, certain qualifications can be made. Firstly, as we have seen, few of the "new parochial nuclei" increased greatly in size during the seventeenth century. Secondly, insecurity was still a fact of life in Malta under the Knights and a spur to gregariousness and collective defence. Thirdly, the growth of the larger settlements into market and service centres cannot be ignored. Fourthly, this crystallization of nucleated settlements out of a dispersed pattern was not only a feature of the landscape of Malta. Swanzie Agnew¹ has noted a similar situation in the coastal plain of Bas Lanquedoc which, historically, has been subjected to many of the same processes as Malta.

In Bas Lanquedoc, in spite of raiding and similar troubles, "the concentrated village as we know it today was slow in evolving. Isolated hamlets continued to exist throughout the 'Dark Ages'". In evidence Agnew cites documents and "the numerous ruined medieval churches and chapels throughout the countryside, some of which are known to have served several parishes. As the least safe settlements were abandoned, Agnew points out, the remainder would tend to grow in numbers.

1. 'Rural settlement in the Coastal Plain of Bas Lanquedoc', Geography, vol. XXXI, 1946, pp.65-66.

Cap.

an indication that neither reasons of security or church organisation were wholly the cause of concentration is given by the settlement history of Gozo. This island was more exposed to attack than Malta and suffered more raids, it was also subject to the same ecclesiastical regime yet, 'a priori', it appears that the larger rural settlement units did not form until a later date. The original rural parishes on Gozo were not erected until the latter part of the seventeenth century and structurally the villages differ from the Maltese plan. They have more open, dispersed, straggling patterns and are much younger. Certainly the population of Gozo was small in the late sixteenth and the early seventeenth centuries but it was apparently quite large prior to 1551.

Thus, for the present at least, we must reject theories which propose any one factor to bring about the nucleation of rural settlement within the Maltese Islands, whether we are discussing the late Middle Ages or the abandoning of settlements in the Order's rule. Once certain settlements had established an advantage of size over their neighbours they acquired a momentum and started to become not only centres of population but also bases for commercial, ecclesiastical and military organisation. It may be that ecclesiastical forces contributed strongly to attaining the original momentum, though the writer thinks it more likely that wider social forces were involved, but in the seventeenth century growth and extinction were due to a simple economic truth - the rich get richer and the big get bigger. Inevitably the smaller settlements, vestigial elements from the medieval pattern, were unsuited to the society that emerged in

the modern world, under the Order. It will be noted that very few of the 1436 settlements disappeared before 1575 - Melliña, Hal Far and, possibly, Hal Mule are the only examples and the first two can be accounted for by raiding. Hal Mule was a small, inland, hamlet near Żebbuġ. The list of churches in 1436 suggests that there were thirty-eight casals, or nuclei of casals, with sufficient status to warrant a church. Thirty-five of these remained in 1575, but by 1798 there were only twenty-four. Thus, the whole structure of the settlement pattern was altered during the period of the Knights as the Island adjusted itself from the medieval world, to its new position in Mediterranean affairs.

cap. Unless a great deal of new material comes to light on church re-organisation during the fifteenth, sixteenth and seventeenth centuries (and ecclesiastical archives have not, as yet, been worked in to any great extent) then these structural changes must be seen primarily as the result of economic forces reinforced by social changes which increased wealth made possible.

LANDSCAPE FEATURES ASSOCIATED WITH
ABANDONED VILLAGE SITES.

In the mid-seventeenth century decaying village sites were a common feature in the landscape of Malta. Abela¹ mentions numerous sites which still bore ruined buildings. Sometimes only the church remained or a group of cisterns which had formerly served the houses. Another writer,² after commenting that many casals had been abandoned for fear of corsairs, tells us that the vestiges of ruined houses were common and mentions several former village sites, particularly in the north and west.³

Where the site was not so obviously marked Abela was often able to recognise former casals from other signs - a Hal or Raġa place name, an isolated church, foundations of buildings, a concentration of roads or the word 'Misraħ' which, in Maltese, can mean 'Piazza', thus indicating the site of a former village square.

Richardson⁴ analysed this type of landscape feature as it appears on the six inch map of the Island today. He looked for the following features - isolated church or chapel (75 instances), a road knot (25), cisterns (15), the small fields which formerly backed the houses of the village (18) and the name Hal (12).

It is worth examining the usefulness of these criteria.

1. op. cit. 1647.

2. Anonymous, 'Descrizione dell'Isola di Malta,' early seventeenth century, R.M.L. 631.

3. Ibid. f.4v.

4. op. cit. 1960, Appendix C, 'The Lost Villages of Malta.'

Wayside chapels occur so commonly in many Mediterranean lands that they are hardly more than an indication of possibility. If building styles are plotted as well, churches become a more useful marker. The traditional style of Maltese chapels, in which form and size are dictated by the characteristics of the Globigerina limestone, is markedly different from later Renaissance and Baroque structures, particularly in forms of decoration. All seventeenth and eighteenth^{century} lost village sites, visited by the writer, except Tartarni and Nigret where virtually nothing remains of the old nucleus but the road pattern, have had traditional pre-Order style chapels standing on them. When all such medieval chapels have been plotted they may give us more information of the fifteenth century settlement pattern.

Clusters of cisterns mark settlement sites from the Bronze Age onwards. Thus, except in the most obvious cases where there is an association of all these features, it is difficult and unreliable to find village sites using the above criteria. The name Hal is a good indicator but, like all the above features it is non-specific in time. The word misrak can refer to any area of flat open ground, as well as village squares. In short, documentary evidence is essential if a dating and causation of abandonment is to be assigned to a lost village.

Most of the villages which declined during the Order's rule have a good association of the above criteria and show up well on the six inch map or from the air. Earlier settlements are usually indicated only by Hal name and documentary sources.

Fig. 6:10 - The lost village of Ta Maxluq
(M.R. 5067) from the air.

+



Summary of Place Name Evidence relating to Heartland Villages apparently extinct by the beginning of the Seventeenth Century.

"Hal Arrigh"	Treas. B. 289, f.188. Described as extinct by (A) p.105. "Hal Arrig" probably lay near coast between Bubagra and Hal Far. Name recorded by (C) as "Hal Aarar."
del/n "Hal Caprat"	Described as extinct by (A) p.91. who states that the site lies between Qormi and Birkirkara.
"Hal Charrat"	(A) p.106. (B) p.58. (P) p. 546 records a "Hal Harrat" near Zabbar. (A) indicates a similar location.
"Hal Far" (M.R.5564)	This settlement is believed to have existed in 1436 (F). There are, as yet, no references to it being inhabited in the period of the Order. Extinct (A) p.104.
"Ta Halfrida"	Treas. A. 178, f.23v. Near Siggiewi.
"Hal Giauhar"	Described as extinct by (A) p.103. Map in (C) attaches name to a site lying between Kirkop and Gudia.
"Hal Gnmi" (M.R.595673)	No written record of settlement.
"Hal Jauhar"	Name recorded by (P) p.491. Probably another form of Giauhar above.
"Hal Kadi"	Described as extinct by (A) p. 104. Probably lay in Hal Far area.
"Rahal Niclusi"	Described as extinct by (A) p.99. According to (F) site marked by Tal-Marhla church (M.R.4966).
"Hal Ntus"	Name recorded by (P) p.527 near Siggeiwi.
"Hal Reskum" (M.R.539678)	No written record of settlement.
"Hal Saptan"	Treas. B. 302, f.276 (M.R.564657).
"Hal Sayd"	Described as extinct by (A) p.106. Today "Has Said" (M.R.591702).

- "Hal Seyegh" Described as extinct by (A) p.101. Probably lay between Qrendi and Żurrieq. (P) p.582. records the name near Qrendi.
- "Cas Spital" Treas. B.289, f.194 (1654) "Cas" = Casale. Described by (A) F.103 as extinct. Probably lay near Gudja. l.c.
- "Cas Sultan sia Sufleni" Treas. B.289, f.181. Probably "Has Saflieni" (M.R.5469).
- "Hal Tabuni" Described as extinct by (A) p.97. Reference to a plot of land in 1658 called "ta Chal Tabuni". R.M.L. 1302, f.5. Near Siggiewi.
- "Casal Tarser" Treas. B. 289, f.174. No other record.
- "Hal Tmin" Described as extinct by (A). Reference to "Hal Timil" Treas. B. 302, f.276. Probably in the triangle of land bounded by Żabbar, Tarxien, and Żeitun. However there is a "Tal Tmien" on the six inch to one mile map of the Island. (M.R.593682).
- "Misrah Blandun" (M.R.5465)- Name may be indicative of a former Piazza. l.c.

- A - G.F.Abela, op. cit. 1647.
- B - Louis de Boisgelin, op. cit. 1805.
- C - G.A.Ciantar, op. cit. 1780.
- F - A.Ferres, op. cit. 1866.
- P - A.Preca, Malta Cananea, Malta, 1904.

Where map references are given to places which cannot be found on the two inches to one mile map, the name will be found on the six inches to one mile map.

Summary of Evidence relating to Heartland Settlements
abandoned or diminished since the beginning of the
Seventeenth Century.

Bordi (near Lija)	Pop. 60 (D) Mentioned 1614 and 1616. Pop. 92 (A). (B) describes it as an inconsiderable village.
Farruġ (M.R. 5268) l.c.	Mentioned 1614 and 1617, Pop. 53 (A). Treas. B. 290. E64, eighteenth century, contains a plan of the area. A church is shown but no dwellings. (B) describes Farruġ as a small village.
Għar Kbir (M.R. 4567)	Mentioned 1617, Pop. 117 (A), still occupied 1772 (C).
Gion (near Zeitun)	Mentioned 1614 and 1617, Pop. 37 (A).
Kbir (M.R. 48966B)	Old nucleus marked by Tal Providenza Church. Mentioned 1614 and 1617, Pop. 119 (A), abandoned by 1772 (C). del l.c. (B) describes it as a shrunken village.
Kdieri	According to (A) this village lay on the road from Zebbuġ to Verdalla. Mentioned 1614 and 1617.
Lew	Formerly lay around Tal Hmiene church (M.R. 5165) (F), 22 households (D), mentioned in 1617 and by (A).
Manin (near Qrendi)	7 households (D), mentioned 1614 and 1617, mentioned (A).
Mam (M.R. 495735)	Pop. 50 (D), mentioned 1614 and 1617, Pop. 70 (A). (B) describes it as an inconsiderable village.
Marnisi (M.R. 578667)	Mentioned by (A).
Millieri (M.R. 5266)	San Giovanni Church marks old nucleus. 15 households l.c. (D), listed 1617, Pop. 66 (A). Reference to an inhabitant of "Cas: Milleri" 1693 (U).
Nigret (M.R. 446713)	Founded early seventeenth century. Pop. 242 (A). (C) describes it as diminished.
Tartarni (M.R. 4568)	20 Households (D), listed 1617, mentioned by (A).
Haxxluq (M.R. 5067)	Ta Haxxluq church marks old nucleus. Listed 1614 and 1617, pop. 171 or 161 (A). (B) describes Haxxluq as a small village.

- A - G.F.Abel, op. cit. 1647.
 - B - Louis de Boisgelin, op. cit. 1805.
 - C - G.A.Ciantar, op. cit. 1772.
 - D - Università 22.
- 1614 - Estimate of population made in that year
A.O.M. 6385, ff.120-121.
- 1617 - Estimate of population made in that year
A.O.M. 6385, ff.123-128.

b) Settlement on the Coasts and in the North-West
of the Island.

cap. The adjacent map (fig. 6:11) shows clearly the contrast which existed, in the mid-seventeenth century, between the concentrated development of the Heartland and the sparsity of roads and settlements in the peripheral areas. Virtually all the villages at present existing in the latter areas have grown up since the arrival of British naval power and the cessation of the corsair threat. The distribution of roads and settlements which existed in 1650 remained basically unchanged for another century. In the latter part of the eighteenth century there are indications that the settlement of more exposed areas was beginning.

Though the lack of settlements close to the coasts is to be expected the emptiness of the north and west is, at first sight, surprising. Abela, in his "Descrittione di Malta" (1647) divided the Island into two - a "Parte di Malta Inhabitata" and a "Parte di Malta Habitata". The division between the two corresponded roughly with the line of the Great Fault. The uninhabited state of the north and west was the result of a complex combination of factors resulting from the interaction of the physical background and historical events.

cap. North and west Malta was originally a plateau capped with hard coralline limestone. This block was shattered by faulting so that the present day relief is accidented. A number of faults traverse the region producing a series of escarpments defining barren limestone ridges. Between the ridges the downthrown areas have become, with the continual downwashing

Fig. 6:11 - Roads and Settlements C.1650. 12.

Sources: - Settlements; census material.

Roads - All plots of land in Treas.B. 289

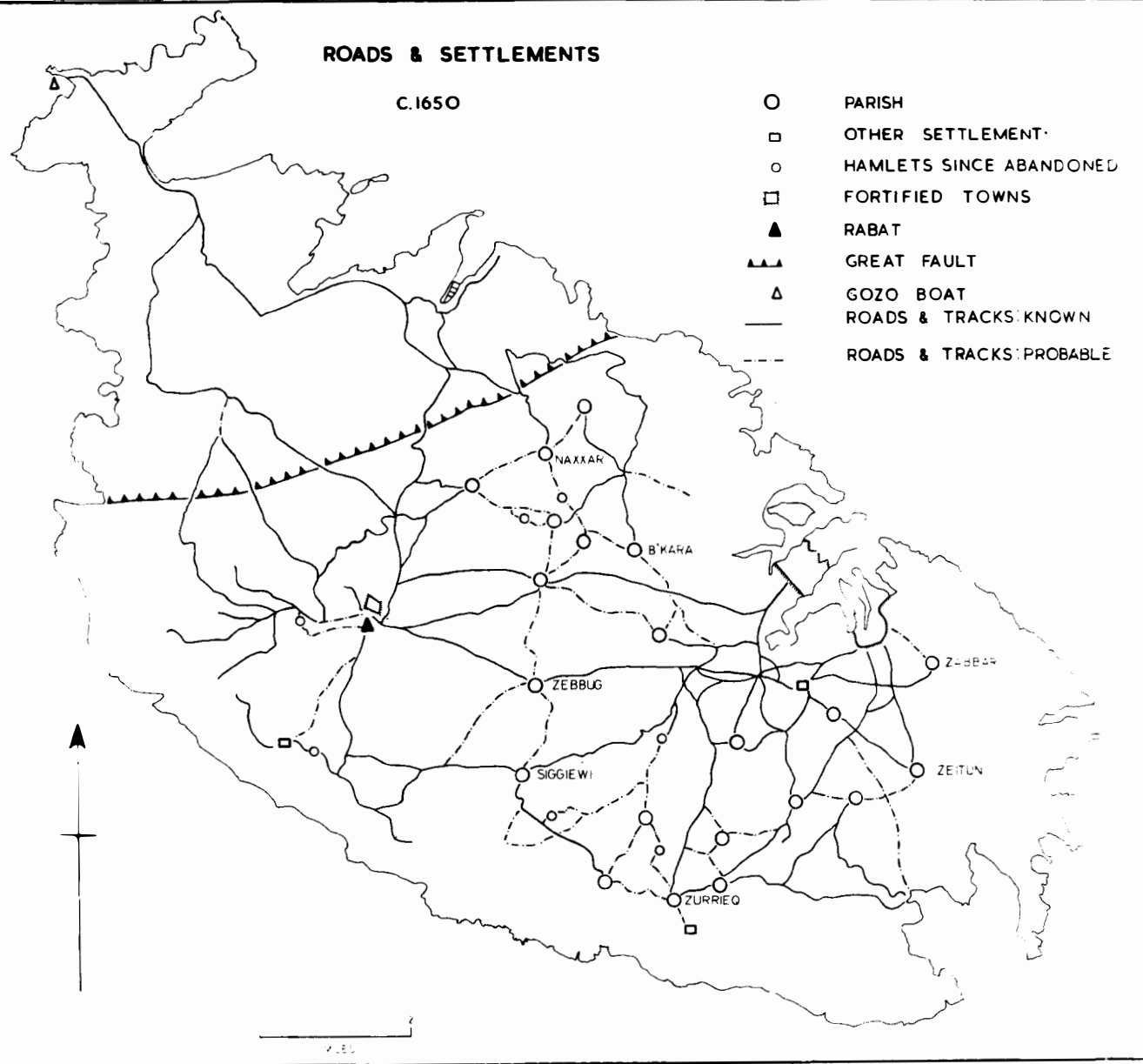
are described in terms of the roads which
run nearby. All such stretches of road
were plotted and extended by interpolation
using the six inch map of the Island,
which shows existing roads, tracks and
field boundaries.

Probable roads were interpolated.

ROADS & SETTLEMENTS

C.1650

- PARISH
- OTHER SETTLEMENT
- HAMLETS SINCE ABANDONED
- ◻ FORTIFIED TOWNS
- ▲ RABAT
- ▲▲▲ GREAT FAULT
- △ GOZO BOAT
- ROADS & TRACKS KNOWN
- - - ROADS & TRACKS PROBABLE



of erosion products, soil filled. As irrigation water is frequently available the depressions are potentially very fertile. Where these valleys meet the sea in the east, excellent bays result which, in unsettled times, invite the swift piratical thrust.

The area consists then of a series of ridges and dales, with the ridges acting as a barrier on communications with the eastern part of the Island. Historically this has produced a remote isolation which can be coupled with the vulnerability of the coasts.

The largest fault in the series mentioned above is the Great Fault which produces a steep, north-west facing, escarpment approximately two hundred feet high. This feature, lying between the vulnerable remote north-west and the more easily defended south-east, has developed into a fundamental division in the landscape of Malta. The fault is a fine natural defence and there is a strong tendency, in troubled times, for the inhabitants to abandon the north-west and to seek security in the east.

The abandoned state of the north-west in 1650 was one result of the troubles of the late Middle Ages but there seems to have been, historically, several movements of people and settlements in and out of the area.

In late Punic or early Roman times a series of round, defensive, towers were built. One of these stands on a crossing point on the Great Fault escarpment - and acted not only as a look-out post, but also probably, as a strongpoint.¹ The existence of such a strongpoint might

1. Dr. D. Trump M.A. Ph.D. Curator of Archeology at the National Museum, Malta. Personal Communication.

Fig. 6:12 - Aerial photograph of the Pwales
depression lying between Upper
Coralline ridges.



well indicate that the north-west was subject to incursions and there may have been some withdrawal of population.

It is possible, although we have no evidence but supposition, that abandonment took place in the late fifth century at the time when Vandal raiders were active in this part of the Mediterranean and again during the ninth century as the Arabs beleaguered the Byzantines.

We do know that the area was utilized and settled for some time between the coming of the Arabs (870 A.D.) and the beginning of the fifteenth century. The region is scattered with place-names, indicating agricultural activity and settlement, and the majority of these must post-date the Arab conquest. There is documentary proof of the existence of many of these names in the fourteenth and fifteenth centuries.

Undoubtedly the physical geography of the north-west discourages strongly nucleated settlement of the type found in the eastern part of the Island. This is partly due to the broken nature of the country and partly to the presence of numerous springs which offer opportunities for dispersed settlement. In consequence the predominant settlement type of the north-west, prior to the area's abandonment in the fifteenth century, was probably a small cluster of two or three houses around a source of irrigation water.

The concentration of 'djar' (house) ¹ place-names in the area is an indication of this dispersal. However a few villages and hamlets did

1. J.Aquilina, op. cit. 1961, p.203.

exist. In 1436, when Malta's original ten rural parishes were erected, the north-west cannot have been densely populated for the area given to each of the three parishes, which shared jurisdiction over the region, was relatively large. Two of these parishes were centred on settlements lying outside the north-west - Naxxar (M.R.4974) and Mdina (M.R.4671). Only one parish was centred on a village within the region - Mellieħa (M.R.4279). Nor does the fact that the village of Mellieħa had parish status necessarily indicate a nucleated casal of the type found in the east. It may only have been a church and a few houses, serving a large area of dispersed settlement. The village did not survive long. In 1458¹ a dispute arose between a local nobleman and the Università of Mdina over the ownership and enclosure of a piece of land, which stands in close proximity to the site of Mellieħa. There are a number of documents relating to this dispute but none mention a village at Mellieħa. Yet the enclosing of this piece of land, by the nobleman Inguanez, would almost certainly have interfered with the rights of way and pasturage of the villagers. That the village of Mellieħa could have wasted so quickly (between 1436 and 1458) suggests that it was a settlement of little consequence, or possibly that its demise was catastrophic.

Other possible nucleated settlements in the area are attested largely by place-names and other evidence non-specific in time. The place-name evidence is summarised below.

1. R.Valentini, Documenti per servire alla Storia di Malta, A.S.M, Rome, 1938, p.115.

"Hal Draco" (R.M.L. 631 f.4v, this document is early seventeenth century). The name still exists today as Hal Dragu. (M.R. 4575).

"Hal Musa" (Treasury A. 178, f.7v) (M.R. 4082) extinct.

"Rahal tal Guerdia" (R.M.L. 631, f.5) - Rahal element now extinct. Wardia still exists and there is a Wardia Church (M.R.4677). l.c.

"Hal Ghul" (Abela, op. cit. 1647, p.65) - extinct name which probably referred to a site near Wied-ir-Rum (M.R.4270).

l.c. A fairly large group of Hal place-names exist near Mosta (M.R.4874).

"Hal Dimech" (Abela p.70) "Cas: dimegh" (A.O.M. 1182, 1620, f.394).

"Hal Pessa" (Abela p.70) "Cas: Pissa" (A.O.M. 1182, 1607, f.37).

"Hal Calleya" (A.O.M. 1182, 1616, f.218).

"Hal Meyn" (Abela p.83) "Hal Mey" (A.O.M. 1183, 1620, f.3).

"Hal Dheeis" (Abela p.83).

"Rahal Hobla" (R.M.L. 631, f.5) "Hal Hobla" (A.O.M. 1182, 1618, f.246).

Ta Hammut (M.R. 4976) - name exists in this form today. This site was suggested by Beeley.¹ The name is possibly "Hal Samud" (R.M.L. 870, 1439 , f.30) quoted by Mifsud,² as the word Hal has a strong tendency to elide.

The author of R.M.L. 631 also suggests the sites of abandoned villages at "Gebel Guzara" - Gebel Ghawzara (M.R. 4676), behind Salina Bay - "Rahal Gumeri" - although at this time only the church, "S. Antonio tal Gumeri", remained and a Casal Puales in the Wied Tal-Pwales.

It might be thought that under the Order, as pressure developed on existing land there would be a movement towards colonizing the north^{west},_A

1. B.W.Beeley, The Individual and Changing Rural Society in Malta, Ph.D, Durham, 1960, p.53.

2. A.Mifsud, A.M, vol. III, Malta, 1918, p.269. F.N.

as a step towards utilizing it more intensively. In fact during the seventeenth and eighteenth centuries no settlement approaching a hamlet in size developed although a few houses were added to the dispersed pattern. Economic (see chapter IV) and social forces seem to have been responsible for perpetuating this situation, together with the acknowledged insecurity of the area. Until the middle of the eighteenth century the Order was continually reacting to rumours of a Turkish attack. The whole Island must have shared this general insecurity and few families would care to live far from the fortresses in areas where they might easily be cut off. The north^{west} was particularly prone in this respect as there was always a tendency for the defences to stop at the Great Fault. Partially as a result of this settlements never developed in the north^{west} and the distances involved in the walk from the existing villages to farmland in the area, must have been a drag on agricultural intensity. Coupled with this, communications in the north^{west} were not good and getting agricultural produce out of the area would encounter, by local standards, some difficulty.

The closely knit society of a Maltese village does not encourage hiving off, particularly into a region which must have been generally regarded as unsafe. The collective experience of a paternalist society would not approve such a move. During the seventeenth and eighteenth centuries this force was reinforced by another centripetal one for, as we have already discussed, there is evidence to suggest that at this time

the larger villages were growing at the expense of outlying hamlets.

In the face of problems of defence, transport and tradition there had to be a particularly strong reason for living away from the larger villages. The availability of irrigation water in the northwest provided this. Although no settlement which could be described as a hamlet developed, the area was scattered with isolated houses whose distribution mirrored that of springs producing irrigation water. Occasionally, as at Ghain Tuffieña (M.R. 4176), a group of three or four farms clustered together but normally one, sometimes two, families lived close to the precious water, the complicated irrigation works and the crops requiring constant attention. Loneliness and exposure being compensated for by the comparatively rich living which could be obtained from irrigation farming. The houses of these families tended to be dour little buildings of tough Coralline limestone, with very few windows, none of which were on the exterior walls. Usually they were defensively sited at the valley head, pressed hard against the Coralline outcrop, they frequently had caves running into the rock at the rear of the house; a difficult cranny from which to winkle the inhabitants. Many examples of this type of building still exist today.

c) The Growth of New Settlements adjacent to the Harbours.

The most striking change in the settlement pattern, which took place during the rule of the Order, was the establishment of a group of new towns around the Grand Harbour and Marsamxett. With the installation of the Order's headquarters on Malta such a development was almost inevitable. The Knights had been attracted to Malta by its strategic value which lay in the Island's position supported by fine harbours. During the Middle Ages these assets had been under-utilized, largely because Malta lay within the Sicilian Kingdom. Spain, which controlled Malta and Sicily at this time, had a purely negative interest in the Island. There were plenty of good, easily supplied, bases in Sicily free from the problems which Malta's lack of resources and liability to blockage^d involved. All the Spaniards wished to do was to keep the Island out of the control of hostile powers and they were not interested in developing its strategic assets. This neglect of a marchland station had been one of the principal causes of decline in Malta during the late Middle Ages and it had also led to under-utilization of, possibly, the finest harbour in the central Mediterranean. As a matter of course then once the harbours started to be used, by a naval power, a number of important changes to the settlement pattern took place.

When the Order arrived the towns existing on the Island were miserable, even by medieval standards. In the centre of the Island stood Mdina, the capital, with its suburb Rabat. Mdina had been partially deserted since the middle of the previous century¹ and the commissioners

1. Università No. 3, f.9.

of the Order reported that the majority of the capital's houses were empty.¹ It is difficult to account for this as Mdina was one of the few fortified positions on the Island and presumably one of the least insecure. Decline may have been due to members of the more wealthy classes moving to Sicily and possibly, retaining their property in the hope that one day they might be able to return.

At the tip of one of the peninsulas that project into the Grand Harbour stood a small fort behind which was the little, unfortified, settlement of Birgu. The inhabitants of this town were few in number and did not form part of traditional Maltese society. They looked outside the Island, ^{and} lived, when they could, by trade and external contacts. Possibly they were not even subject to the authority of the Mdina Università.² All this was reflected in the names attached to the settlement - the 'Castello a mare' and Birgu, both of which have Romance, or Latin roots, whilst the names Mdina and Rabat are Arabic in origin.

During the reign of the Order this dichotomy, between an outward looking section of society based upon the harbours and a traditional community in the Heartland, increased as the harbour towns developed. Symptomatic of these changes was the decline in importance of Mdina with the curtailing of the field of action of the Università and the creation of a new capital adjacent to the harbours.

1. G.Bosio, op. cit. 1602, p.30.

2. A.O.M. 670, f.54.

Neither element in the bi-nuclear pattern of towns which the Knights inherited was well suited to the modern world and the needs of the Order. In one sense, as a capital, Mdina was impotent for it did not control the Island from the withdrawn defensive site on which it stood. The town had all the strategic limitations of a keep. By elimination the ^{Knights} ~~Order~~ had Birgu forced upon them as ^{their} ~~the~~ first Malta capital and unfortunately this was a town beside the harbours rather than a fortress dominating them. Birgu's radial plan suggests that it is later in origin than Fort St. Angelo (or 'Castello a mare') and grew up around the strongpoint.

Unfortunately the harbourside settlements had developed before the invention of modern artillery and neither was sited with any consideration for the range of sixteenth century weapons. Reassessing the town site in these terms the Order's military engineers pointed out that Birgu was commanded to the south by a line of hills and, more dangerously, by Steberras peninsula which lay on the opposite side of the Grand Harbour. Repeatedly it was suggested that a new fortress town should be built on Steberras to take advantage of the peninsula's dominating position in the centre of Malta's finest harbours. The Order's financial position and the attitude of many members towards Malta overruled these considerations. A number of Knights hoped that if Rhodes could not be recaptured then a pleasanter and stronger base might be found elsewhere. A policy of strengthening and adding to the existing works was drifted into. A landward line of defences was built to protect Birgu, Fort St. Angelo was strengthened and a high cavalier raised¹ in it to gain parity for the defensive

1. Quentin Hughes, op. cit. 1956, p.15.

artillery with any that might be deployed on Steberras. Fort St. Angelo had contained a number of dwellings¹ and these must have been cleared out to enable the Grand Master to establish his household there. At the same time as these changes were taking place the ditch, which severed the Fort from the remainder of the peninsula, was deepened until the sea was able to flow through.

In Birgu a large amount of redevelopment took place in order that the Knights, their institutions and followers could be housed. A number of Auberges (residences where members of the Order might live) were built together with a hospital and various establishments for armament industries. In spite of all this building and rebuilding the medieval street plan was retained. The extent of this phase of redevelopment is still evident today from the number of existing buildings displaying 'Melitan Fat Mouldings.' These mouldings are a decorative feature which were used around doors and windows during the early years of the Order's rule in Malta.

There was soon considerable pressure on the available housing space within the town and the Order was obliged to issue a number of regulations, in 1562, to control the pattern of development.²

In Rhodes the Order had lived within a 'collachio', segregated from the local population. The regulations now defined a collachio within Birgu and a number of restrictions were placed upon lay persons in an effort to remove them from it over a period of years.

These housing regulations were enforced by a body known as the 'Officio

1. Bosio, op. cit. 1603, p.30.

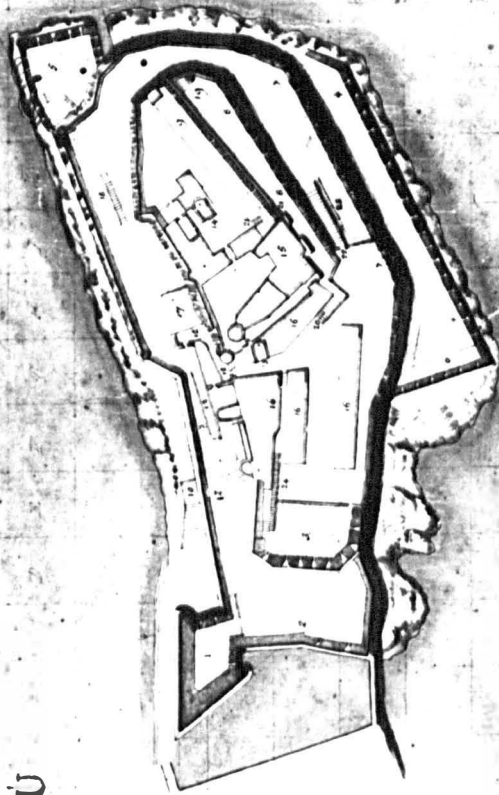
2. A.O.M. 91.

Fig. 6:13 - Undated plan (probably Eighteenth
Century) of Fort St. Angelo.

R.M.L.

PORT DES GALERES

PLAN DU CHATEAU S'ANGE



PORT DES ANGLAIS



1. Entrée du fort.
2. Cour intérieure.
3. Bâtiment principal.
4. Bâtiment secondaire.
5. Bâtiment tertiaire.
6. Bâtiment quaternaire.
7. Bâtiment quinaire.
8. Bâtiment sexnaire.
9. Bâtiment septnaire.
10. Bâtiment octnaire.
11. Bâtiment nonnaire.
12. Bâtiment décnaire.
13. Bâtiment undécnaire.
14. Bâtiment dodécnaire.
15. Bâtiment tridécnaire.
16. Bâtiment tétradécnaire.
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91. Bâtiment heptadécadécadécadécadécadécadécnaire.
92. Bâtiment octadécadécadécadécadécadécadécnaire.
93. Bâtiment eptadécadécadécadécadécadécadécnaire.
94. Bâtiment octadécadécadécadécadécadécadécnaire.
95. Bâtiment nonadécadécadécadécadécadécadécnaire.
96. Bâtiment décadécadécadécadécadécadécadécnaire.
97. Bâtiment undécadécadécadécadécadécadécadécnaire.
98. Bâtiment dodécadécadécadécadécadécadécadécnaire.
99. Bâtiment tridécadécadécadécadécadécadécadécnaire.
100. Bâtiment tétradécadécadécadécadécadécadécadécnaire.

della Casa.' The officials composing this body were also given the power to censure any proposed alteration to buildings. This commission was the first of a series, with ever increasing powers, which operated as a planning control body and thereby shaped much of the urban growth which took place under the Order.

Even with all this redevelopment - and building up of open ground within the walls - housing pressure increased and it seems that a small unplanned suburb, Bormla, started to grow up outside the walls and glacis of Birgu.

In 1551, under Strozzi, a member of the Order, the defensive network around the harbours was scrutinized. Strozzi favoured a new fortress on Sceberras but in the end it was decided to strengthen the existing works with two supporting forts, as by this time the Knights were fearful that the Turks might descend upon them at a time when the new defensive works were only half completed - thus giving an aggressor Sceberras in a partially defended condition.

The first of the two supporting fortresses, St. Elmo, was built at the tip of Sceberras peninsula, covering the harbour mouths and denying an attacker's artillery unhampered use of the promontory.

On the peninsula adjoining the Birgu a fortress was built at the landward end, just behind two valleys which, by lowering the divide, had created a natural moat. The building of this fortress gave covering fire to the main defences and prevented the peninsula being used as a convenient gun platform from which Birgu might be bombarded. Whether or not the work was also undertaken to provide a fortified space within which a town

could be built is difficult to say but soon after the fort was completed, Grand Master Sengle gave out building lots to encourage urban development.¹ There is much doubt as to when the building of the town began. Many contemporary prints of the Siege show no more than fortifications, windmills and a few houses on the peninsula. On the other hand some accounts of the time give the impression that a fairly populous town existed.

Towards the end of the same decade the project for building a new capital city was again taken up but this time with more serious intent. The idea of a town Sceberras had had a long history. Bosio² claims that the commissioners sent by the Knights, to report on the Island in the late fifteen-twenties, suggested such a town and the project is mentioned again and again in documents dating from the early years of the Order's reign. Several military engineers produced plans for a town on the promontory including Ferromolino, Strozzi, Genga (1558) and Lanci (1562).³ It does, in fact, seem certain that a few years before the Siege the scheme was accepted - this was particularly due to Grand Master Valette (elected 1557) who was convinced of the project's worth.⁴ About this time there are numerous references to the "edificazione della nuova cita nella montagne de St. Elmo" and the instructions to an ambassador of the Order in 1563 declare that it had been "determinato edificar nova cita nel luogo et monte di St. Elmo".⁵

1. Elizabeth Schermerhorn, Malta of the Knights, 1929, p.48 N.D. and 'Relazione dell'Isola di Malta fatta alla S.Ta di N.S.Papa Gregorio XIII dell'anno 1582,' A.S.M, Rome 1936, p.289.

2. op. cit. 1603, p.30.

3. A summary can be found in Bosio, op. cit. 1603 and Hughes, op. cit. 156, p.21.

4. Bosio, op. cit. 1602, p.392.

5. A.O.M. 429, f.211v.

At the same time the problems of financing the project were being assessed. For instance, in 1562, the European estates of the Order were being told to provide contributions.¹ And at the beginning of the Great Siege year an ambassador was instructed to open discussions on various problems bearing on the building of the new city, including the finding of a suitable engineer.²

During the Siege of 1565 everything the military engineers had predicted regarding the site deficiencies of Birgu and the surrounding positions was proved right and only a series of bad tactical errors by the Turks allowed the heroic defenders to prevail. It was realised that to withstand another assault a much stronger defensive position would have to be sought. This realisation overcame the "make do and mend" outlook which had led to the tactically unsound concentration upon ~~the~~ Birgu. No sooner was the Siege lifted than Grand Master Valette asked the Pope to send a military engineer to Malta capable of designing a new town and fortifications for Scieberras. Francesco Laparelli was chosen. He arrived on the Island towards the end of December 1565 and within a few days produced the plans of a new city - Valletta - for Mount Scieberras.

At this point, once again, external political forces were paramount in shaping the Island's economic future. According to Bosio,³ when Laparelli arrived a good many of the Order's belongings were packed in preparation for an evacuation of Malta. Two forces stayed this movement. Firstly, the Pope and several other European powers had been fully

1. Ibid. f.210v.

2. A.O.M. 430, f.269.

3. op. cit. 1602, p.723 et seq.

awakened to the problems of defending Europe's "soft under belly" and they wanted the Order to continue to hold what could be a key central Mediterranean base. Secondly, Laparelli having seen the defensive and strategic possibilities of Sceberras was convinced that it should be exploited. Whilst the Order vacillated Laparelli started work collecting materials and workmen and tracing out the line of the fortifications.

There were numerous conflicting views on fortification techniques at this time and so many problems connected with organisation and finance, that it was very difficult to propose and execute a new scheme, for there was immediately criticism from many quarters. Laparelli successfully defended his scheme against a number of consultants who came to the Island to advise on the new works.

In a way Laparelli was a very effective instrument of Papal policy. The Pope wanted the Knights to remain in Malta and his engineer got on with the business of committing the Order to the Island at a time when it was almost too disorganised and weakened to conduct a policy of its own. In one sense all the landscape changes which took place in Malta, during the next two and a half centuries, can be seen as stemming from a few weeks work by a dedicated and extremely competent military engineer who effectively gave Papal policy material expression and lined out a course of action for the Order when it lacked one.

Possibly the designing and building of Valletta are worth studying in some detail for although an immense amount has been written on the town plans of this period, and the theory which lay behind them, there appear to have been very few studies dealing with the practical problems

surrounding the building of individual settlements. The outlook and technique of the planner is only one side of the picture which is altered and evolved by contact with particular sites and situations in history.

There can be little doubt that Laparelli was aware of all the current planning theories but it is hard to believe that there was any attempt to spread a town based on wholly theoretical conceptions over Sceberras. Certainly the town planning principles of the day were applied but applied as the circumstances suggested for as Valletta grew it came to reflect the history, finances, and experience of the Order just as it mirrored the physical limitations of Malta together with the traditions of Maltese vernacular architecture. The existence of a definitive physical background, traditions and problems of finance were probably factors which expressed themselves elsewhere and prevented more 'ideal' plans reaching fulfilment. Above all there is the time factor in planning. Valletta was built at a fantastic speed yet many of the forces which helped to mould the original plan of 1565 had disappeared or altered by the time the later stages of building were reached. The plan mutated in response to these changes.

1.2. Sceberras Peninsula lies between and controls ^{the} Grand Harbour and Marsamxett. This position is so obviously pre-eminent that it might be wondered why it had not been exploited earlier in history. Firstly the relief of the peninsula was not attractive. Sceberras rises steeply out of the harbours and from its back a series of short valleys fell quickly to the sea. The peninsula was rimmed with cliffs and offered no convenient mooring place beside which a settlement might grow. In this context the

Fig. 6:14 - Topography of the land lying around
the Grand Harbour and Marsamxett.

Source: Harrison and Hubbard, op. cit. 1945.

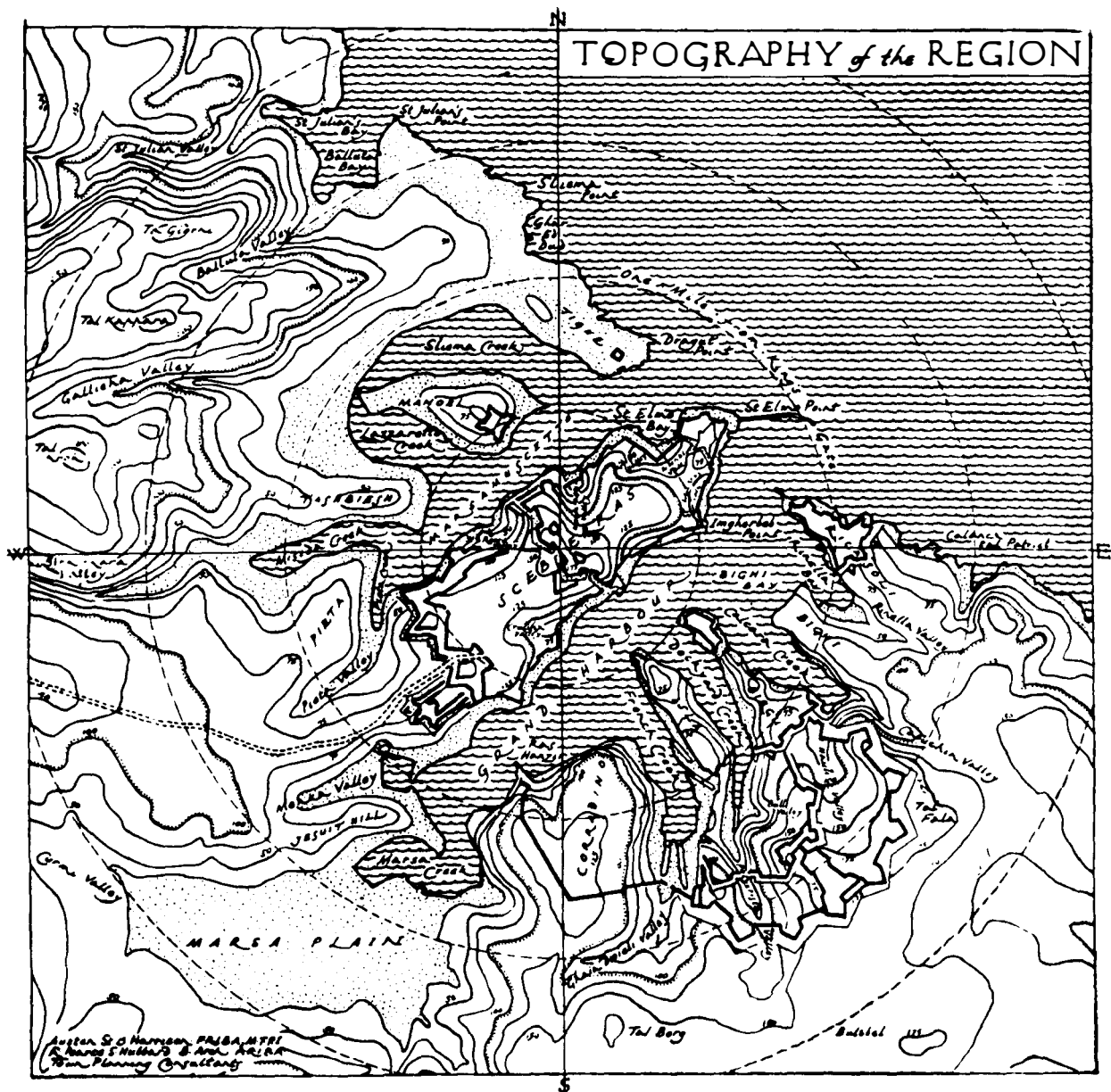


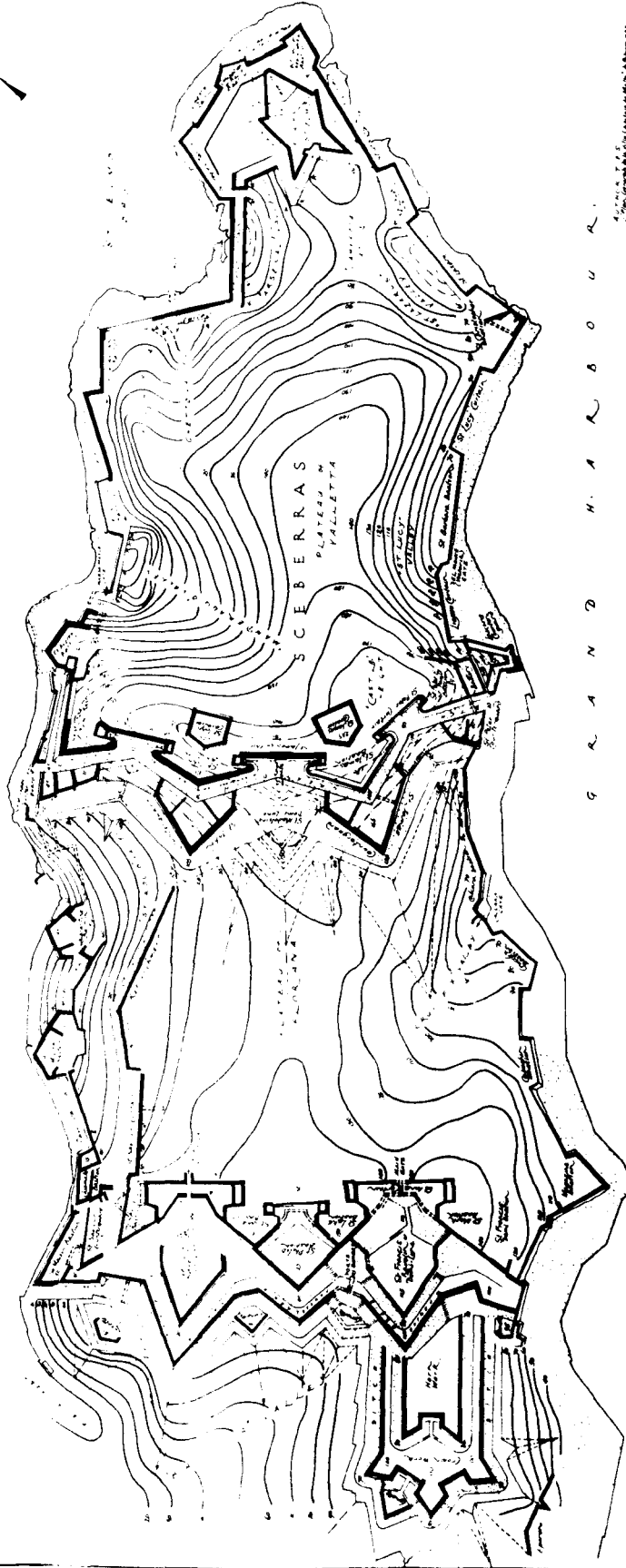
Figure 5.

Fig. 6:15 - Topography of Sceberras Peninsula

Source: Harrison and Hubbard, op. cit. 1945.

VALLETTA & FLORIANA

Planning Commission



9 2 A N D H A B O U R



Author: S.B. Harris, et al. with: C. A. Harris & others. Planning Commission

Published by the Planning Commission, Malta, in 1974. The map is based on the 1:50,000 scale map of Malta, published by the Ordnance Survey, London, in 1968. The map is a reproduction of the original map, and the Planning Commission is not responsible for any errors or omissions.

the little creeks at the other side of ^AGrand Harbour, set at right angles to the harbour mouth and almost immune to the foulest weather, were far more attractive. The peninsula also lacked an adequate water supply.

The advancing technology of war and the development of artillery transformed the site potential of Sceberras making it essential that its inherent defects were overcome. Artillery removed Birgu's parochial security and gave significance not only to Sceberras but also to the outlying ring of hills which encircled the creeks. These two facts of physiography guided the pattern of the Order's town and fortress building.

The town site offered by Sceberras was by no means ideal. It lacked water, mooring places and its surface had been serrated by the valleys of small, ephemeral streams. As will become apparent much effort was expended in attempts to alter unfavourable facets of the physical geography.

Topography presented the town planner with several problems. Firstly where to lay the landward line of defences? The valleys mentioned above were roughly paired so that some advantage could be achieved by siting the landward front immediately behind one set. Genga¹ had proposed a landfront in the position later occupied by Floriana lines but this scheme presented too large an area in relation to the Order's finances and defensive manpower. Laparelli had really no choice but the line he chose which enclosed the highest ground (180') of the peninsula, gained some advantage from relief and did not present too large an area for fortification.

1. Quentin Hughes, op. cit. 1956, p.21.

The shape of the site dictated some form of rectilinear plan for its elongation eliminated any possibility of radiality. However if a grid iron plan were laid on the site as it stood the broken nature of the ground would distort the street profiles. It was determined to cut away rock from the higher ground and use the material to fill in the valleys. Work on this was started and there is evidence of infilling in certain areas, e.g. St. Paul's Street.

As the work proceeded the Order became increasingly pressed for money. Endless appeals for funds were directed into Europe and the Order was even forced to ask Papal permission to mortgage property in France, Spain, Italy and Portugal.¹ This together with the fear of another Turkish attack led to a concentration of resources upon the defence works.

The harsh realities of the situation brought about a cessation of levelling and a fundamental alteration in Laparelli's plans. When the rectilinear plan was laid on the still uneven surface, without any concessions to relief, it produced streets which 'switchback' and frequently become stairways in order to cope with the gradients.

Nature had omitted to provide a convenient creek to shelter shipping and the Knights decided to create one together with a site for a ship building yard. To this end it was proposed to excavate two coves on the Marsamxett side of the peninsula exploiting already existing valleys. Two things motivated the incorporation of this idea in the plan. Firstly there was the desire for concentration; obviously it would be preferable to have the galley squadron penned at the strongest point in the defences.

1. A.O.M. 431, Lib. Bull. 1565-67, f.226.

Secondly there had been a galley pen - or 'manderaggio' as the Knights called it - at Rhodes, and many probably felt it would be a good idea to reproduce it here. It is difficult to suggest why it was decided to excavate the manderaggio on the Marsamxett side of the peninsula except that the most pronounced valley was found there and this lessened the amount of excavation. The consequences of the scheme were perhaps not realised for it meant that the galleys were to be based upon Marsamxett rather than the Grand Harbour. The former enjoys much poorer shelter and in rough weather the entrance is more difficult to negotiate. Besides there were already covering fortresses on the south side of the Grand Harbour whilst there were none to deny an enemy the north side of Marsamxett.

The shipbuilding and repairing industry had long been established in the creek which lies between Birgu and Senglea and moving it to Valletta involved much more than moving the squadron and building a new yard.

To speed the excavation of the galley pen, the site of the proposed manderaggio was turned into a quarry and it was decreed that all building stone used in Valletta should be cut from it. Apparently as excavation neared completion a harder limestone was encountered which was unsuitable for building. This stopped the work. The project could have been finished had the Order been prepared to bear the cost but with the passage of time several factors had altered. The need to concentrate upon Valletta had disappeared as it was apparent that the population of Malta was growing quickly enough to keep the older towns, on the other side of

the Grand Harbour peopled and defended. Meanwhile the galley squadron had strengthened its links with Birgu and the Grand Harbour, making a move to Marsamxett more difficult.

Thus, geology, earlier distributions of towns and industries, together with the characteristics of the harbours combined to prevent the imposition of a theoretical scheme which took little account of local conditions. There are numerous examples of ideal and theoretical notions being altered as the plan responded to the Maltese 'milieu.'

The foundation stone of Valletta was laid by Grand master Valette on the 28th March, 1566.¹ Documentary evidence relating to the first phase of the city's development is sparse, but it seems highly probable that no overall plan existed at this stage - or that if one did it was ignored at a later date. Laparelli had designed a system of fortifications and a street plan but no thought appears to have been given to the positioning of the major buildings and their relationship to each other - the city was being treated "as a mere appendage to the military form." Although considering the historical circumstances this is understandable.

A few examples will illustrate that on the one hand the fortifications, together with the street plan, and on the other the building up of the city were not conceived at the same time. Firstly Laparelli's street plan divided the city into blocks which were too small to accommodate the larger buildings, so that when such structures, e.g. The Magistral Palace, St. John's Church - were erected the street plan had to be altered by the amalgamation of blocks and the building over of thoroughfares. Secondly,

1. W.Porter, A History of the Knights of Malta, vol. II, 1858, p.479.

it is clear that when the building of the city was started no pre-ordained plan was followed, so that the buildings of the Order which were to be collected within a *collachio*, were in fact, scattered all over the town. It is possible that Laparelli originally designed a much more regular grid with all the streets approximating to twenty feet in width and, at a later date, it was decided that a central group of more spacious thoroughfares was required - Merchants Street, (see Appendix 1) Kingsway, and Old Bakery Street were widened and, by way of compensation, Strait Street and Zachery Street were constricted to alleys. But further documentation is needed relating to his period.

What is more, it would be difficult to produce an overall plan unless there were at least rudimentary ideas on the form of the larger buildings.¹ Girolamo Cassar, the Maltese architect, designed all such buildings after 1569, the year in which he was sent to "Rome, Naples, and other places" to look at architecture and collect ideas.² Laparelli left the Island in 1569 after he had served on the commission which drew up the building regulations.

The building of the fortifications began as quickly as possible. Fort St. Elmo had been re-built as soon as the Siege was lifted and now curtain walls, punctuated by bastions, were stemmed from it around the peninsula. The rock faces were cut back, sheered and topped with walls. Almost everywhere the fortifications were composed of the 'living' rock which made them highly resistant to the sapping techniques of the day.

1. Genga, according to Vasari, produced designs for several major buildings, to accompany his plan. Vasari's Lives of the Painters, trans. Mrs. Forster, 1894.
2. A.O.M. 432, f.253.

With but little effort from the military engineers the cliffs which walled Sceberras were made impregnable. The land front needed more ingenuity. Laparelli had chosen the line of the land front to enable the defenders to extract the maximum advantage from topography. He then designed an impressive sequence of works which made the city virtually impregnable. Great squat bastions were carved out of solid rock and fronted by a ditch. Cavaliers were added a few years later, although they formed part of the original plan.¹

The main 'enceinte' was built in about five years and during this time very few buildings were erected. It was not until December 1566² that the Order decided upon the compulsory purchase of the land enclosed by the line of the fortifications. A commission was set up to examine all claims to the land and the Order then bought it at a price determined by the commissioners. The land was later re-sold at a fixed rate.

Hughes has argued cogently that the street plan was laid out in 1566.³ However, it was not until 1569 that the Order offered building sites to the public and issued regulations governing the erection of buildings within Valletta.⁴

The preamble to the regulations announced the division of the city into two parts, one to be called the collachio and occupied by members of the Order to the exclusion of all others. The religious Order of St. John had always maintained its convent in seclusion from the world.

1. Bosio, op. cit. 1602, p.741.

2. A.O.M. 91, f.179v.

3. Quentin Hughes, op. cit. 1956, p.26.

4. A.O.M. 92, ff.141-142.

At Rhodes all the principal buildings of the Order stood within a walled and fortified area and when the Knights took up residence within ~~the~~ Birgu they defined a collachio¹ and evolved a series of housing regulations aimed at removing the Maltese from it, over a number of years. Concentrated seclusion was difficult to maintain alongside the Order's crusading activities, high living standards, and desire to defend Valletta efficiently so the whole idea was dropped and a new city built without any attempt at segregation.

Eleven regulations followed the preamble.

Firstly there could be no reselling of sites without permission of the commission controlling the works. This regulation had the double function of preventing the taking up of land for speculative purposes (there had been much property speculation during the Order's early years in ~~the~~ Birgu) and also ensured that undesirables did not acquire land through nominees.

Then followed two regulations designed to preserve the building line within streets. There were to be no gardens or courtyards fronting buildings, nor were projecting stairways, or other works, allowed. Two reasons were given in support of these regulations. Firstly to avoid any impediment of the thoroughfare, and this obviously had military significance, and secondly to produce some uniformity within the street.

As in the case of many 'bastides' there were regulations to ensure that the site once acquired was built over within a specified time. Building work had to start within six months and the house occupied at A.O.M. 91, Lib-Conc. 1562.

the end of the year. In addition when a site was taken up the commissioners decided how much money had to be spent on the structure to be erected. The specified sum had to be spent within three years. This regulation ensured that building was done at a high standard and there were certain streets where sites could only be acquired if the buyer was prepared to erect a 'palazzo.'

Possibly because it was unnecessary in the context of the time, there were no regulations demanding that the whole frontage of a site should be built over. Probably for similar reasons height regulations were omitted although the Order required intervisibility between the Magistral Palace and various elements in the defences. Likewise it was desirable that the guns of the cavaliers could be directed at the harbour mouth.

All who built on corner sites were obliged to ornament them. And this work, together with the building or doorways, was to be supervised by a master mason appointed by the commissioners.

Each house had to make connection with the sewers underlying the streets and be provided with a cistern for the storage of rainwater. The peninsula was virtually waterless and this caused great difficulties whilst the city was being built. The problem was never really overcome until 1614 when Alof de Wignacourt built an aqueduct from the perched, upper, water table in the centre of the Island. Even so an aqueduct would have been vulnerable in a siege.

The penultimate regulation required that all building stone be cut from the manderaggio.

The last stipulated that sites "will be allocated according to the

resources and social position of those who will build."

There is much of interest here particularly if we couple these regulations with some of the earlier powers of the 'Officio della Casa' which allowed it to suppress designs for buildings if they were found unsuitable. There is no reason to think that these powers had lapsed so that the commission had all the necessary authority to guide the building of an elegant city.

Whilst it is perhaps claiming too much to suggest that the Order were aiming at producing a city of 'architectural streets' there was a strong emphasis on building at a high standard and several regulations are intended to produce a unity of design.

The streets although, by the standards of the day, wide¹ were too narrow to allow adequate views of the facades of buildings. Cassar probably became aware of this problem for later he attempted to overcome it by setting back St. John's Church from the normal building line.

When the Order moved the convent from ~~the~~ Birgu in 1571 there were very few buildings in the new city² but in the next few years buildings shot up all over the site. The Order erected seven auberges, the Magistral Palace, a treasury, conventual church, the Hospital, and a large bakery. At least half a dozen churches were erected in the first few years and there was innumerable private building projects. Cassar was responsible for much of

1. All the streets crossing the peninsula from ^{the} Grand Harbour to Marsamxett are in the region of twenty feet wide. Those running along the peninsula vary in width. Starting from the Grand Harbour side they are, respectively, in feet, 19, 25, 33 (Merchants Street), 10, 33 (Kingsway), 10, 33 (Old Bakery Street), 22, 9, 22.
2. Del Pozzo, Storia de Malta, vol. II, Venexia, 1715, p.5.

the public building. As a preparation for this work he had gone to Italy where he had acquired a number of Renaissance and Mannerist devices. But his work was shaped to a large extent by the designs and techniques of Maltese vernacular architecture; an architecture which had its sources in the possibilities and limitations of the local Globigerina limestone. Thus an architect who was essentially Maltese was responsible for the major buildings within Valletta.

In 1582 a visitor to Malta recorded that the new town was now largely built-up and there were few ^vacant sites remaining.¹ By 1590 there were nearly 4,000 people living within Valletta and this piece of urban entrepreneuring, undertaken when the Order were desperately short of money and fearful of another Turkish attack, was a success. There seems to have been little reluctance amongst the Maltese to move into the new town. There were several reasons for this. The most important was undoubtedly security.² The whole Island knew how near the defences of ~~the~~ Birgu and Senglea had been to succumbing in 1565 and the fortified town on the high peninsula must have been very attractive. Besides who could say that ~~the~~ Birgu and Senglea would not be cut off and abandoned in a siege?

Then there were the social pressures; the desire to live in the new capital, alongside the rulers of the Island and more simply genuine enthusiasm for the new scheme.

1. 'Relazione dell 'Isola di Malta fatta alla S.Ta de N.S.Papa Gregorio XIII dell'anno 1582,' A.S.M, Rome, 1936, p.289.
2. During a war scare in 1634 the Council of the Order had to command people to remain in Mdina, Birgu, Senglea, and Gozo. A.O.M. 256, f.129v.

Economically the Order was immensely attractive and pulled to it all the groups of people dependent upon it for a living. Valletta's rapid growth had an adverse effect on the surrounding towns. Senglea, so the visitor of 1582 tells us, was reduced to a slum. And the same writer comments that hardly half the houses in Mdina were inhabited as most people had gone to live in Valletta. Birgu must certainly have lost much of its economic vitality.

cap. Whilst the lesser towns were for a time depressed the general strength of the economy, and the reflection of this in the population figures, soon ensured that all the urban areas around the harbours began to grow speedily. The Order were spending steadily on buildings and fortifications, their military machine demanded and created a series of industries to equip and service it, whilst the high standard of living enjoyed by the knights gave work to many people. The economy of the Island responded to the stimulus provided by the Order's wants and spending. In these circumstances the harbours and the surrounding towns became increasingly attractive. Table 6:1 traces their growth. All the harbour towns showed a marked upward trend of population but were variations in the speed and manner in which growth was accomplished.

TABLE 6:1

	1575	1590 ^x	1614	1617	1632	1658	1670	1674	1680 ^{xx}	c1741
Valletta	-	3397 ^a	10744 ^b	11185 ^b	8601 ^a	9219 ^a	-	12144	8038 ^a	-
Vittoriosa (Birgu)	-	2568	2551	2811	3063	3192	3000	-	1900	3600
Senglea	-	1602	2709	3019	4049	3730	3750	-	3138	-
Bormla	1200	1288	1396	1543	2778	2662	2877	-	2400	-

x Famine and plague in early 1590's.

xx Plague in 1676.

a Maltese only - excluding Order, slaves, men on galleys.

b Maltese, slaves, men on galleys, excluding members of the Order.

1575 - R.M.L. 643.

1590 - Università No. 2, f.39.

1614 - A.C.M. 6385, ff.120-121.

1617 - A.C.M. 6385, ff.123-128v.

1632 - R.M.L. 162, ff.125-127.

1658 - Università No. 2, f.165.

1670 - -do- f.213.

1674 - Del Pozzo, Storia de Malta, vol. II, Venezia, 1715, p.442.

1680 - Università No. 2, f.246.

c1741 - R.M.L. 141, f.321.

THE DEVELOPMENT OF VALLETTA IN THE SEVENTEENTH
AND EIGHTEENTH CENTURIES.

Although the city of Valletta was shaped in its broad essentials, during the latter part of the sixteenth century, a number of important structural and functional changes took place during the remainder of the Order's rule. There were two forces of prime importance shaping later growth. Firstly, there was the increasing population of the Island and, in this respect, growth was strongly concentrated in the harbourside towns. A partial cause of growth was the assumption by these towns of urban functions besides defence, as they came to act as service centres, particularly in the economic field, for the surrounding country. Secondly, the Knights took increasingly seriously their title of Sovereign Military Order and Valletta came to reflect these growing pretensions of grandeur - it became, with the suburb of Floriana, a microcosm of the great Baroque, absolutist capitals which developed in Europe. Valletta was, wrote Brydone,¹ after seeing the buildings and society of the city, "an epitome of all Europe".

To the original group of public buildings the Order added a theatre, library, custom house, administrative buildings for the Università, it rebuilt the law-courts and enlarged the cathedral and Magistral Palace. *l.c.* The functions of a number of these buildings indicate the growing complexity of the state, as do the numerous 'bandi', or proclamations, regulating many aspects of the Island's life and culminating in the great 'Codice de l. P. Brydone, A Tour through Sicily and Malta, London, 1774.

\1
Rohan into which all the laws were collected.

Many of the more sumptuous private dwellings were erected in the seventeenth and eighteenth centuries. The urban landscape of Valletta came to reflect the growing attention which the Order paid to ceremony, detailed administration of their state and gracious living. Allied to these forces was another which helped to influence the development of the capital. During the seventeenth century Grand Masters were not simply content to rule well and munificently but wished to permanently endow the Order in a way which would ensure its future well being and the remembrance of their Mastership. Sixteenth century Grand Masters like del Monte (the palace), le Cassière (the cathedral), Verdala (Verdala Palace and the fief of Marsa), Aloph de Wignacourt (the Aqueduct), had been content to erect public works during their life time and perhaps leave a good inheritance to the Order on death. Many seventeenth century Masters - de Paule, Lascaris, Nicolas Cotoner and Carafa - besides indulging in lavish spending during their lives, set up foundations the incomes from which were to be applied, in perpetuity, to strengthening some aspect of the Religion's organisation. De Paule and Lascaris both set up foundations to endow galleys and, in the case of the latter, to ensure that sufficient money was always available to keep the Island well stocked with grain. The proceeds from the 'fondazione Cotoner' were applied to the fortifications. The investment work of these foundations was, as a rule, skilled and on a relatively large scale. Virtually all money was invested in Malta and not only did this put money into the economy but the funds were frequently invested

1. Del Dritto Municipale di Malta, Malta, 1784.

in works which provided the infra structure of economic expansion - wharfs, warehouses, ^{and} shops, etc. Grand Masters preferred to invest their capital in Malta rather than abroad because, apart from the administrative advantages, the Order were becoming increasingly embarrassed by the pressure that could be brought to bear on it by European powers threatening to sequester property. For instance, in 1645 the Venetians confiscated property of the Religion as a result of actions by corsairs operating from Malta¹ and in the seventeenth and eighteenth centuries the French were able to apply considerable diplomatic pressure largely because so much of the Order's property was in France. The very wealth of the Order often attracted rapacious interest. The French Kings occasionally levied taxes on the Religion's estates,² whilst the Popes came to regard many of the Italian commanderies as being at their disposal. And above all this there were an immense number of problems in administering hundreds of estates scattered across Europe, which varied in form and profitability. A resident member of the Order was responsible for each property, or group of properties, but many were lax in paying responsions to the central treasury. There were numerous wrangles as to the proportion of the income to be retained by the holder of the estate and the amount to be sent to Malta. Many evaded paying responsions altogether if it were possible and by the mid-seventeenth century abuses were widespread.³ Against such a background it is hardly surprising that a trend developed towards local investment. Whilst Maltese property prices, in some sectors, were possibly high in relation to yields, from the Order's peculiar point of view, there was considerably more security.

1. A.O.M. 258, f.44.

2. e.g. 1693, A.O.M. 264, f.26v.

3. A.O.M. 257, 1640, f.60.

da||a A large part of the wharf and warehouse facilities, developed around the Grand Harbour, were built by the foundations of Lascaris, Cotonera del/a and Manoel. The 'fondazione Cotonera' was large enough to redevelop a whole block of Valletta with a high yield, high density, mixed development structure, consisting of dwellings, shops, warehouses and mezzanines.¹ The same foundation also redeveloped a large part of the "Quartiere della Buccieria Vecchia".² In both cases the form of development was greatly influenced by shortage of building space and the demand for housing at low rentals.

Social pressures, generated within the Order were, then, a powerful influence on urban development and this was particularly true, as will become apparent, in the central group of the city's streets. Away from these streets the strongest force, shaping urban renewal, was the increasing numbers of people coming to live within the city walls and this altered, often quite fundamentally, the original conception of Valletta. Population densities became increasingly high, land which was originally left free of buildings, was taken over for housing and, as pressure continued to increase, slums developed in the least favourable areas. The style, density, arrangements and utilization of buildings reflected these forces.

THE GROWTH OF THE BUILT-UP AREA.

The early years of Valletta's growth were particularly rapid but by the beginning of the seventeenth century this phase was completed and

1. A.O.M. 262, Lib. Conc. 1674, f.35 and Treas.B. 300, f.155.
2. Treas. B. 300, f.162 and f.165.

**Fig. 6:16 - Late Sixteenth Century or early
Seventeenth Century plan of Valletta.
The plan includes many features which
were never completed.**

R.M.L.



a slower rate of development assumed. At the completion of this first phase all the building land, which could be conveniently used, had been taken up. It seems possible, in fact, that early growth was so rapid that additional land had to be allocated for building purposes - due to the lack of early source material it is impossible to be precise about these matters, but it seems that the original plan for Valletta envisaged a much smaller built-up area within the enceinte than that which had emerged by the early years of the seventeenth century. There are several reasons for thinking that the original grid plan did not extend beyond the eighth complete street in from the land front:-

i) We know that it was intended to build a shipyard, on the northern side of Scieberras peninsula, so that at least part of the area under discussion had to be left vacant.

ii) Fort St. Elmo was strongly fortified and equipped with artillery positions on the town side. A bastion was added to the fort's Valletta front in the first years of the seventeenth century¹ and St. Elmo was probably intended to act as the final stronghold if the remainder of the town should fall. In this case it would almost certainly have been provided with a glacis. However, by the first decade of the seventeenth century the space, between the fort and the first buildings of the town, was inadequate for this purpose.

iii) Figure 6:16, which is late sixteenth or early seventeenth century shows the built-up area extending only as far as the tenth lateral street (i.e. the streets running across the peninsula from the Grand Harbour to

1. T.Zammit, op. cit. 1929, p.46.

Marsamxett). The writer would tentatively suggest that, in figure 6:16, the last three streets are additional to the initial lay out.

1 c. Another plan (figure 6:17) dated c.1620 by Harrison and Hubbard,¹ shows that eleven lateral streets had been built-up. This additional street would represent a second phase of expansion into the 'glacis' as the proposed site of the arsenal was built-up.

iv) The alignment of the Hospital (built 1575)² shows clearly that it was erected in an open space without any orientation to a system of streets, other than the road running around the fortifications. As the street plan was extended, to enclose the Hospital, it had to be perverted to accommodate the 'Sacra Infermeria'.

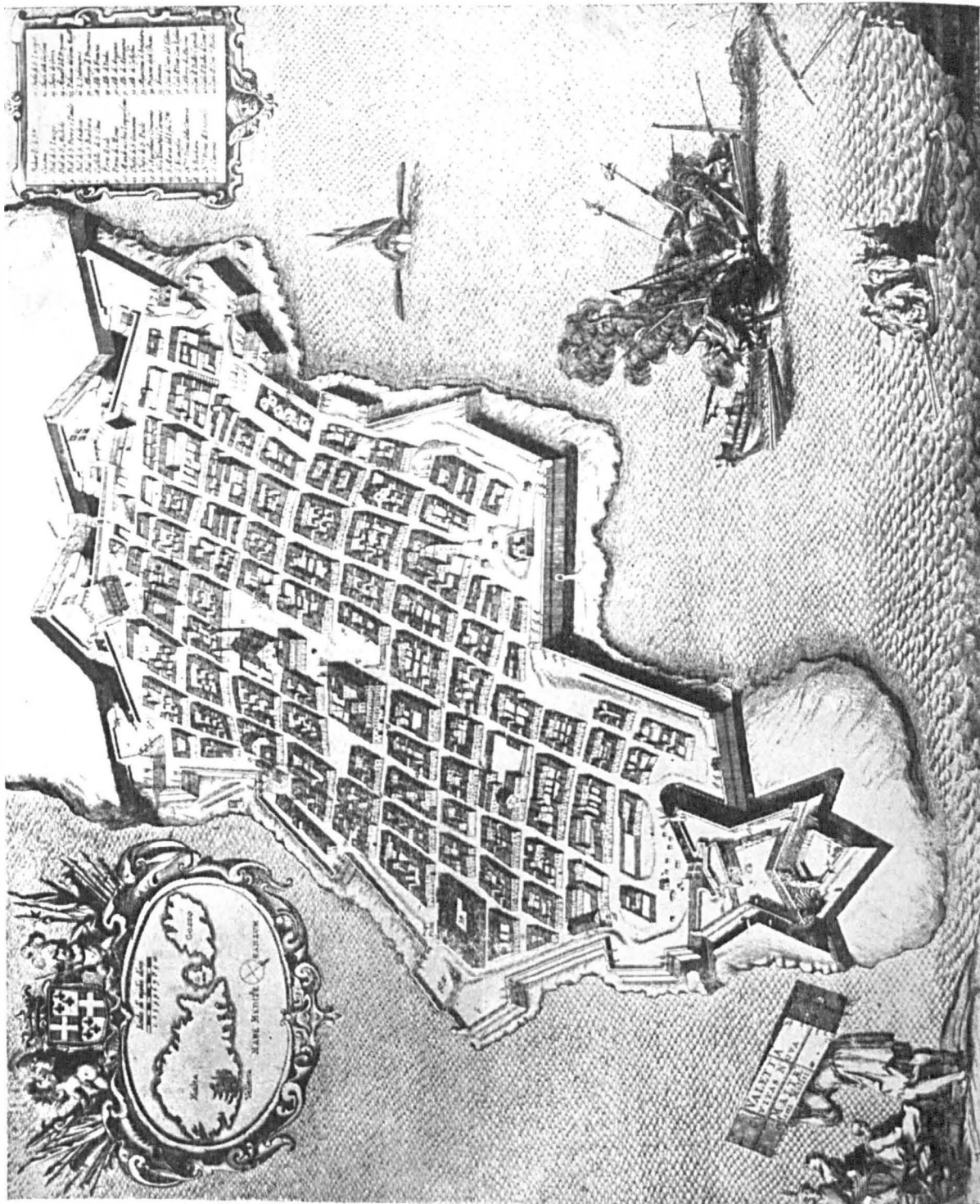
v) There seem to be differences in the size of the blocks, in the eastern part of the town, which could be taken to suggest, that this area was not just built-up at a later date, but that these streets were laid out sometime after the tracing of the original grid. What is more the street pattern, leaving aside differences in block size, does not perpetuate itself precisely in the area.

Dating the two suggested extensions to the street plan is difficult in the absence of documents. The first extension was probably undertaken before 1592 for in that year, according to Zammit,³ the '~~cammerata~~' was built, on the east side of the ninth lateral street, on a block adjoining the Hospital. The second extension involving, principally, the building-up of the abandoned arsenal site, took place at some period between the

1. A.Harrison and R.Hubbard, Valletta - a report to accompany the outline plan for the Region of Valletta and the Three Cities, Malta, 1945.
2. Quentin Hughes, op. cit. 1956, p.152.
3. T.Zammit, Valletta, Malta, 1929, p.34. N.D.

Fig. 6:17 - Early seventeenth century plan of Valletta

dated c.1620 by Harrison & Hubbard, op. cit. 1945.



compilation of figure 6:16 and figure 6:17 (C.1620).

l.c.

As in the case of the manderaggio project excavation of the arsenal was abandoned as quarrying neared sea level. The site of the projected shipyard then developed into a low lying, low class, housing area, just as the 'mandragg' did at a later date. However, in the case of the arsenal excavation was not so deep, due to the eastward decline in height of the Sceberras peninsula. As a result the difficulties involved in utilizing the area for housing were considerably less.

THE GROWTH OF SLUM HOUSING AREAS.

The extent of the built up-area by the first decades of the seventeenth century is shown in figure 6:21. All the readily available building space, within the fortifications, had been taken up and future efforts to increase the number of buildings within the city were attempts to make a more concentrated use of land and to build-up marginal areas which were, in most cases, unsuitable for development. Concentration was also achieved by the subdivision of buildings, the building-up of gardens and the division of blocks to produce additional frontage. A comparison of figures 6:19, 6:20 and 6:21 gives some idea of the general trend and effects of these processes.

Figures 6:17 and 6:19 show the areas which were not built-up by

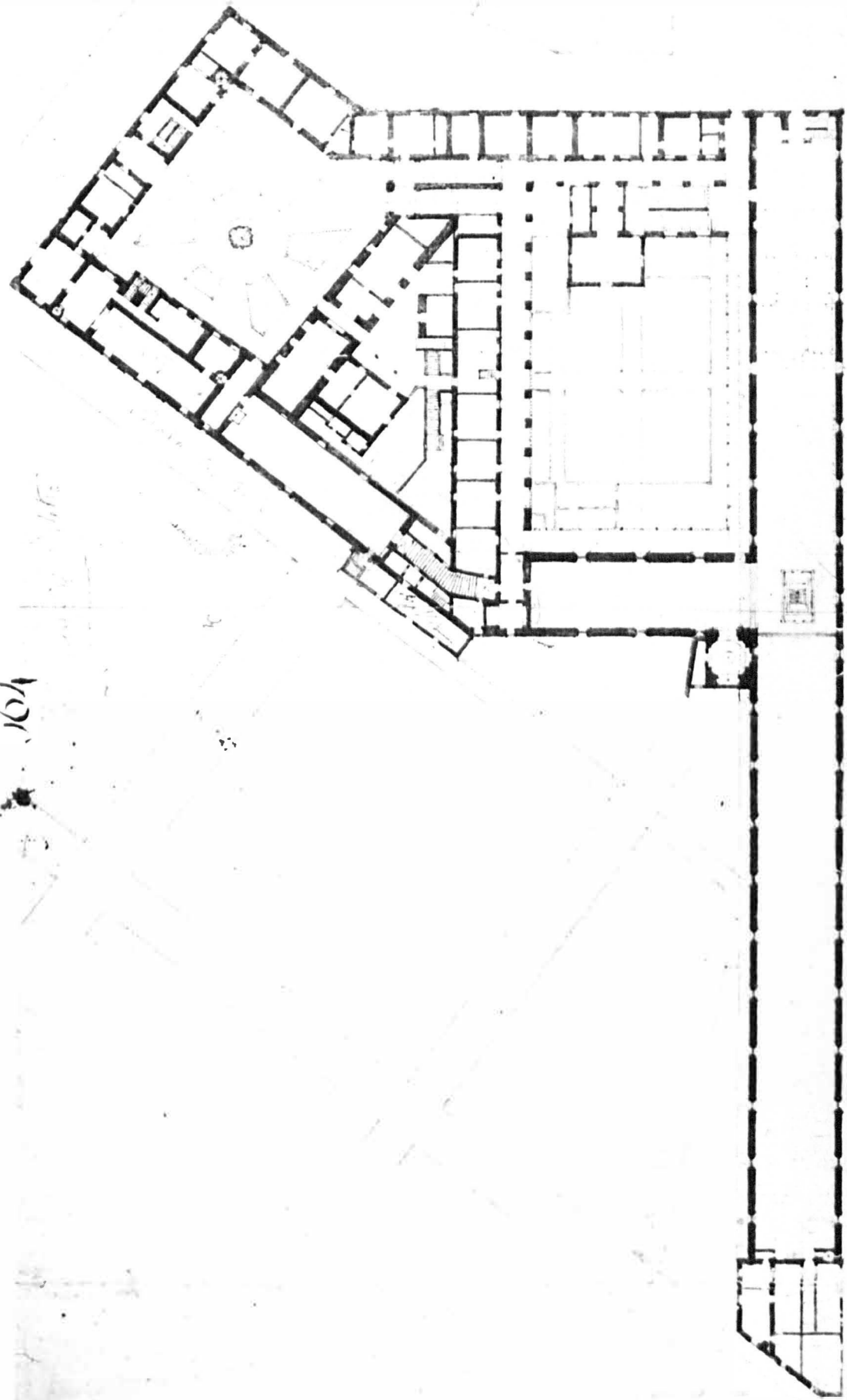
l.c. C.1620. It will be noticed that, in general, they are the valleys which serrated the surface of the peninsula before the town was built - physi-

cally they were the least attractive areas for building. The manderaggio, arsenal, ghetto and St. Lazarus valleys were all outside the original grid

**Fig. 6:18 - Eighteenth Century plan of the Hospital
of the Order in Valletta.**

R.M.L.

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plan - although in the first two special factors operated. Only the St. Lucy valley was included within the original street plan; here there is evidence of infilling and the valley was adapted to make a convenient approach to the del Monte Gate. Much the same things happened at the ghetto valley, where some infilling has taken place and the old water course adapted to provide an approach to the Jews Sally Port. There is some evidence to suggest that the St. Lazarus valley was filled in at a later date to allow an extension to be made to the Hospital.

Other areas which were free of buildings, at the beginning of the seventeenth century should, ideally, have remained so for they were in close proximity to the fortifications. But, just as the glacis around St. Elmo had been consumed, so were these spaces. By 1620 the originally open land above the Santa Barbara bastion had been built-up and several other areas of the town shared this fate. The building-up of these areas took place very largely in the first half of the seventeenth century. In the sixteen-twenties the Order began to grant house sites to supplicants in the following areas:- the manderaggic, around the Hospital and behind St. John's cavalier. The distribution of building lots continued until 1650.¹ One supplication, relating to the manderaggic² suggests that the area had been utilised prior to the sixteen-twenties but that only buildings of a temporary nature had been allowed.

Precisely when the ghetto valley was built-up is difficult to decide. Late in the seventeenth century the building which became the Auberge de

1. A.O.M. 1183, 1184, 1185.
2. A.O.M. 1184, C.1632, f.39.

Fig: 6:19 - The built-up area of Valletta. c.1620.

Source:- Harrison and Hubbard op.cit.
1945.

MARSA MUSCETTO
HARBOR

VALLETTA c. 1620
Based on engraving "Valletta, Civitas Nova-Maltae."
Population approx. 6000.

ST. ELMO
BAY

Fort
St. Elmo

GRAND
HARBOR

1. Open Area between Gunlery
2. Quarry in site of unfinished
Mandraggio or Galley Port
3. Ghelis, or Fountain Valley
4. Arsenal Valley
5. St. Lezerus Valley
6. Open Ramparts

Fig. 6:20 - The built-up area of Valletta, 1939

Source: Harrison and Hubbard op. cit. 1945.

MARSA MUSCETTO
HARBOR

VALLETTA-1939
based on photographs by the Royal Air Force.
Population: 24,400

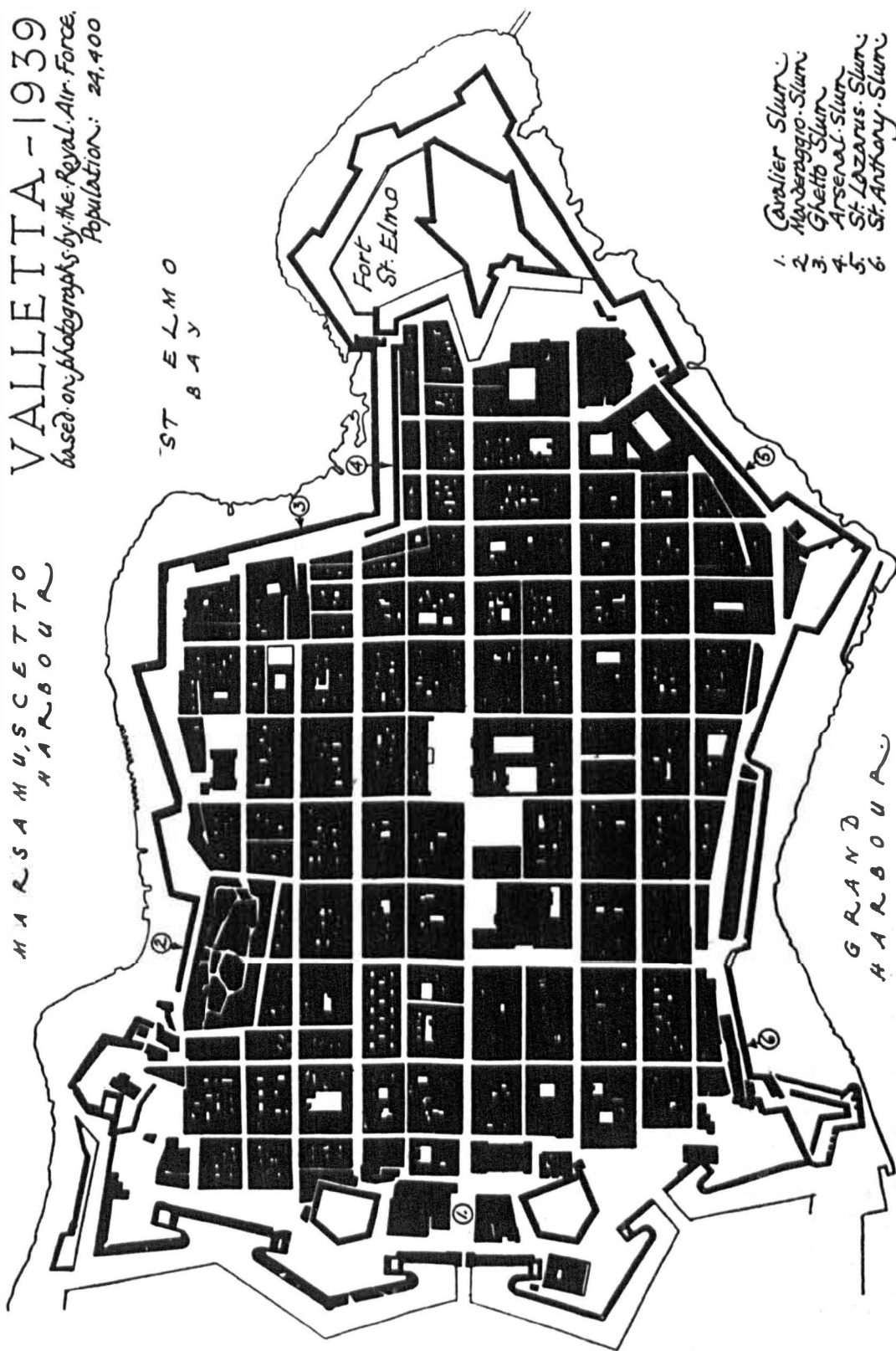
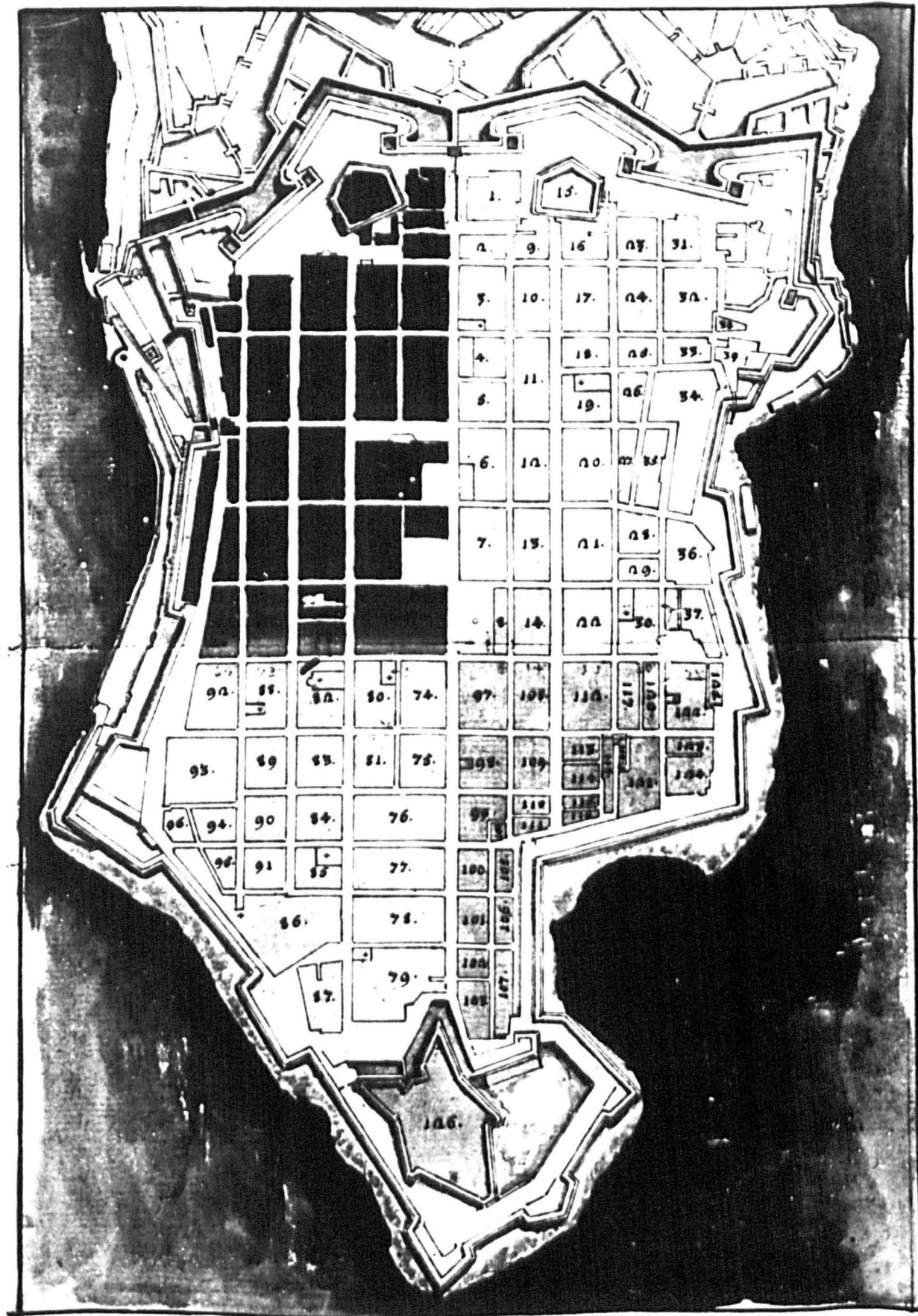


Fig. 6:21 - Plan of Valletta c.1723.

R.M.L. 195.



Bavaria was built here¹ and certainly the area was completely taken up by the early eighteenth century as figure 6:21, compiled C.1723, *i.e.* shows.

There was, of course, a definite limit to the growth of these low class housing areas and as the Order became aware of the problems associated with overcrowding they decreed, in 1666, that no more people, from the countryside, were to come and live within Valetta and the Three Cities.² It seems probable that the growth of low class housing areas slowed after this but did not cease.

A comparison of figures 6:19 (C.1620) and 6:21 (C.1723) shows very *i.e.* well the extent of the peripheral, slum development which took place during the seventeenth century. The slum areas are marked by an irregular street pattern and considerably smaller blocks. The outstanding area of this type was the *manderaggio*. The rectilinear street plan enclosed, but did not attempt to enter, this area, here there were few restrictions on building development and a chaotic jumble of alleys grew up which in parts were no more than four feet wide. By accident the urban patterns which pre-dated the Knights implanted themselves in the new capital - let in by the flaws in the theoretical *manderaggio* scheme. Many plans compiled under the Order's rule give no real impression of the *manderaggio*'s street plan (schemised town plans were common in this period) but figure 6:22 gives an idea of the area's layout in the twentieth century. This illustration, compiled in the nineteen-forties, shows obsolescent

1. Quentin Hughes, *op. cit.* 1956, p.174.
2. R.M.L. 1210, f.142.

Fig. 6:22 - Obsolescent property in Valletta and
Floriana 1945.

Source: Harrison and Hubbard.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	52
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Ashton D B Harmon, 1910-1970, C R Gore S Hilliard & Wm A Rizzo - Manning Smalley

property in Valletta and it will be noticed that all the seventeenth century additions to the street plan, which we have just discussed, are designated as improvement or clearance areas.

DISTRIBUTION OF URBAN FUNCTIONS WITHIN VALLETTA.

When the commission which drew up the housing regulations for Valletta decided that sites would be allocated according to the applicants' position in society, they pretty clearly had in mind a town divided into a series of well marked zones, at least as regards social status. Certainly they were intending to produce a central group of streets which were flanked, principally, by the Order's more important buildings - the auberges, churches, administrative buildings - thus concentrating all the more important business of state in one area. Within this area there were subsidiary groupings, the most important being *i.e.* the placing of the Magistral Palace, treasury and chancellery around Palace Square on Kingsway.

THE DISTRIBUTION OF SHOPS.

In the sixteenth and seventeenth centuries ideas on the zoning of urban functions were not so rigid as they have been recently. Having excluded the lower classes from property ownership in the smarter streets, the governing classes were quite prepared to rent them business premises and possibly, even accommodation in such areas. Building styles reflected this much freer attitude towards the mixing of urban functions. Palladio (1508 - 80) had designed palaces which incorporated shop, or

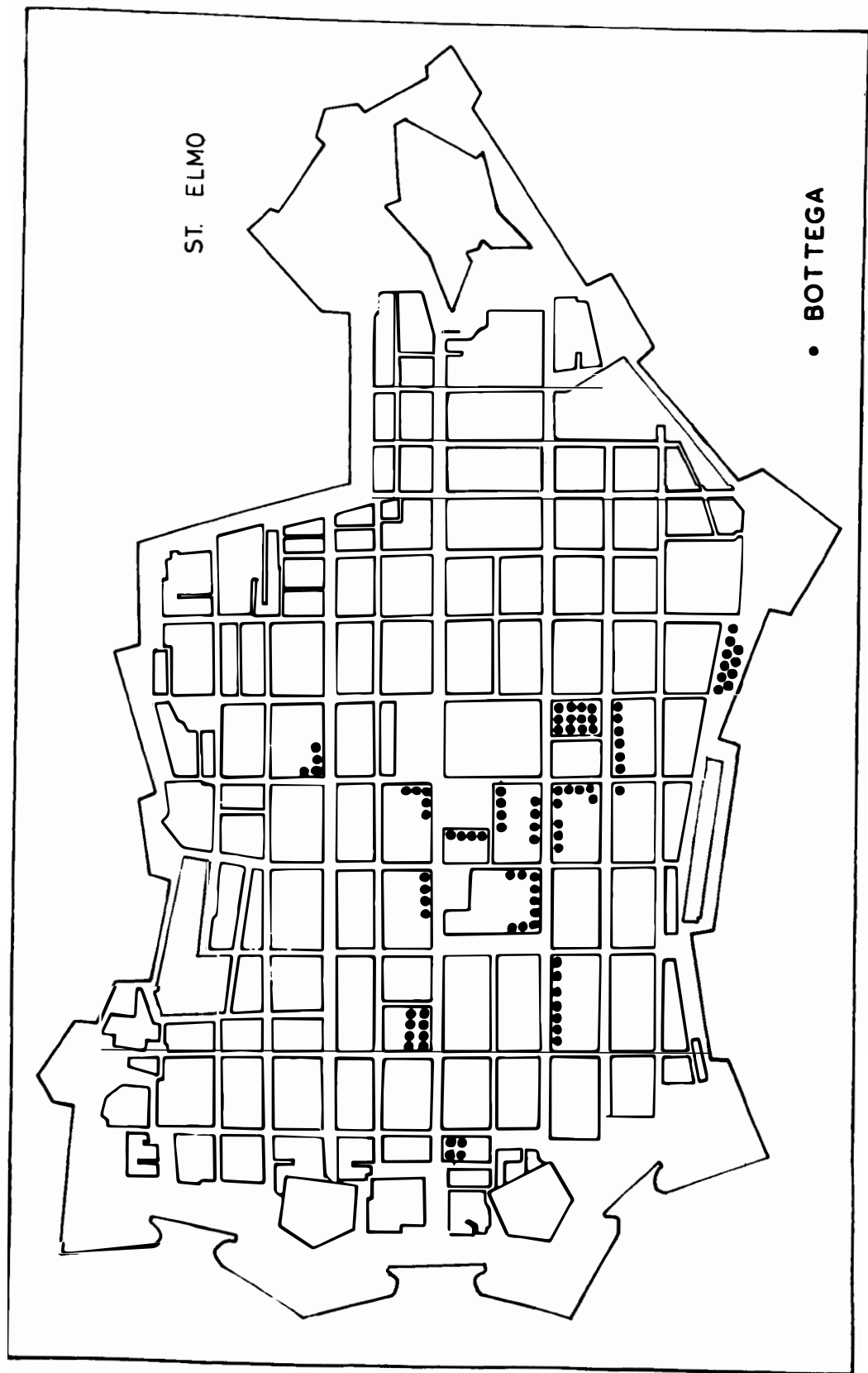
Fig. 6:23 - The Distribution of shops in Valletta, c. 1750.

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Source:- Various 'Cabrei' etc.

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'bottega'¹ development in the facade and drawn attention to the revenue this type of ^{structure} ~~revenue~~ could produce.² In Valletta the Auberge de Provence (Kingsway) (C.1570) was probably designed in this way but in many cases the 'botteghe' were added to buildings at a later date - e.g. St. John's Cathedral. During the eighteenth century such mixed development became general on buildings erected at the time - ^{for instance} the 'Castellania,' ^{and} Municipal Palace, Casa Correa, ^{and} Bibliotheca, etc.

This type of arrangement led to the concentration of many commercial facilities in the same streets as the institutional and administrative buildings. Figure 6:23 shows the considerable concentration of 'botteghe' in Merchant Street and Kingsway, which still dominates the pattern of shop distribution today.³ Besides this supplementary 'bottega' development there were two schemes the object of which was solely the provision of more shop space. In 1643⁴ a large number of shops were built around

1. The word 'bottega' requires a careful definition for whilst it can be translated as shop it also means, and certainly did in seventeenth and eighteenth century Malta, all of the following - "shop, store; warehouse; business premises." (P.Rebora, Cassel's Italian - English, English - Italian Dictionary, 1958.) In the context in which we are speaking most of the 'botteghe' referred to above were shops in the normal sense, but a number were certainly used as offices and warehouses.
2. Palladio, I quattro libri dell'architettura, Venice, 1570, p.12. Quoted by Quentin Hughes, op. cit. 1956, p.142.
3. Harrison and Hubbard, op. cit. 1945, p.62.
4. A.O.M. 257, f.145v and R.M.L. 1302, f.6.

exp. the 'piazza dell'herbe' on Merchant Street and another group were
erected, flanking the same street, on the cemetery of St. John's
Cathedral.¹

The third important street in the central group was Old Bakery Street. This thoroughfare was essentially residential during the Order's rule and contained few shops and public buildings although there were many houses and 'palazzi.'

THE DISTRIBUTION OF INDUSTRIES.

del a. The larger institutionalised industries show^{el} no particular pattern of distribution, nor was there any special effort to site them away from the centre. The 'ferraria', foundry of the Order, stood at the head of Kingsway, just inside Kingsgate. The 'polverista', gunpowder factory, was housed in Merchant Street until an explosion occurred in 1634² and wrecked the building. After another explosion involving gunpowder in 1659³ it was determined in 1665 to move the industry out to Floriana.⁴

The baking industry, as far as it concerned the Order, was concentrated in Old Bakery Street where a bakery⁵ occupied a whole block of the city. There were also bakeries in each of the auberges after the year 1630.⁶ The milling industry, where the motive power was

1. R.M.L. 1302, f.7.
2. V.Denaro, 'Still More Houses in Valletta,' M.H, vol.3, 1962, p.52.
3. A.O.M. 260, f.141.
4. A.O.M. 261, f.27.
5. Built towards the end of the sixteenth century. Quentin Hughes, op. cit. 1956, p.151.
6. A.O.M. 256, f.127.

provided by animals, had a similar distribution to the baking industry. Where windmills were used they were placed on open sites at the city's edge, usually surmounting the fortifications.

Certain other industries like shipbuilding also sought specific locations and the slaughter house was placed near to one of the Sally Ports, to facilitate the disposal of refuse. Zammit¹ claims that doctors and lawyers had the right to expel those practising noisome trades from ^{the} their neighbourhoods. As yet there is no evidence to suggest that this regulation greatly influenced the distribution of such trades.

In 1750² a roll was drawn up of all those persons, in Valletta and the Three Cities, who were liable to service with the militia. A similar roll was compiled in 1766.³ As far as Valletta is concerned these rolls, besides names, give the places of residence in the city and the occupations of members of the militia. The total number of Valletta persons listed as liable to service in 1766 was 3,348 and in Floriana the figure was 472. Whilst these figures give a useful indication of the number of persons living in Valletta, a number of reservations must be made. At this time males between the ages of 16 and 65 were liable for service with the militia. Not every male was included in the roll, certainly members of the Order and clerics were excluded, there were numerous persons not listed because they already held military posts with the Order, others had obtained dispensations from the Grand Master and were omitted. Possibly quite a large number of people who had placed themselves, and their property, under

1. T.Zammit, op. cit. 1929, p.91. N.D.

2. A.O.M. 1065, 'Registro de l'Battaglione delle Quattro Citta ... 1750'.

3. A.O.M. 1066.

the protection of the Inquisitor also obtained exemption. Citizens were not exempted by virtue of social standing, at least as far as the professional classes were concerned, thus advocates, notaries and doctors are listed.

The occupations claiming the greatest number of adherents in the roll were - bakers, shoemakers, barbers, tavern workers, tailors and carpenters. There were a considerable number of advocates, notaries and doctors and a relatively large contingent of silversmiths.

Theoretically it should be possible to plot the distribution of people employed in various trades throughout the town. There are two major problems here. Firstly plotting would be based on the assumption that place of work and place of habitation corresponded. Such a supposition would only be approaching validity in a number of trades. Secondly it is not always possible to locate accurately the place of residence described in the Roll of the Militia. A few trial plots were made but only revealed an apparently haphazard distribution. It may well be that in a town of Valletta's limited extent the forces which tend to bring allied trades and craftsmen into proximity, are not operative simply because the distances involved in going from one part of the city to another were small.

THE DISTRIBUTION OF WAREHOUSES.

As the area within Valletta devoted to warehousing increased greatly, during the seventeenth and eighteenth centuries, this topic is described under the section dealing with urban renewal.

URBAN RENEWAL.

Throughout the seventeenth and eighteenth centuries the urban fabric of Valletta was constantly adjusting to the forces of the time. The Order never ceased to embellish the town as they strove to mimic the absolutist ideas of the day. Indicative of this mimicry was the adoption, by Grand Master Pinto (1741 - 73), of the closed crown of kingship. Naturally such social factors were not the only pressures motivating urban renewal and the general increase in wealth and the growing complexity of the administration (although this is linked with absolutism) were contributory causes. Nevertheless it is true to say that, during the seventeenth century, large scale urban renewal was largely concerned with providing for the Order's primary functions whilst, in the eighteenth century, redevelopments of the town's fabric were usually to provide recreational facilities, the embellishment of the streets can be included under this head, and to house the administrative machinery of local government with which the Order became increasingly concerned.

Early in the seventeenth century slightly more unity was given to the Palace square with the erection of a chancellery in 1602.¹ This completed the housing of the Order's administrative machine. For the rest of the century building work was largely concentrated on reinforcing the Order's two principal functions as hospitallers and crusaders. Shortly *i.e.* after the completion of the Chancellery the fortress of St. Elmo was strengthened and later in the same century when Don Carlos de Gr^unenberg²

1. T.Zammit, op. cit. 1929, p.47.

2. A.O.M. 262, ff.123-124. Grunen^uberg made models to illustrate his proposals and these are preserved in the Palace armoury.

visited the Island the outworks of the fort were refined. The seventeenth century was altogether an intensive period for the building of fortifications in Malta. Ideas on the fortifying of towns were evolving quickly and defence works had to be constantly reassessed in terms of new techniques of siegecraft.

As it lacked outworks the land front of Valletta was vulnerable and some were built round the bastions in 1640.¹ Around the same time Floriana lines were built to deny an attacker a direct assault upon Valletta.² Two additional lines of fortifications were built around the Three Cities.

About 1640 the fosse fronting Valletta was greatly deepened.³ A few years later an auxiliary shipyard was built in the Grand Harbour outfall of this ditch.⁴ The shipyard was roofed in 1652.

The Hospital was greatly enlarged during the sixteen sixties.⁵ Opposite this hospital, or 'Sacra Infermeria', another was built for women and, nearby, yet another for incurables.

By the end of the sixteenth century, there were about a dozen churches and monasteries in the city and the building and reconstruction of such structures continued during the seventeenth and eighteenth centuries. Sites could still be found for this type of development as gardens, or other land, attached to an already existing institution was normally used. The church of Our Lady of Pilar (1670), built to serve Aragonese members of the Order,

1. A.O.M. 257, f.46v.
2. A.O.M. 258, f.3.
3. Ibid. f.3v.
4. A.O.M. 259, f.25v.
5. A.O.M. 261, f.52v.

Fig. 6:24 - Valletta and its satellite fortresses
of Manoel (top left), Tigne, Ricasoli
(bottom right) and St. Angelo (bottom left).



was erected at the back of the Auberge d'Aragon. Several monasteries found land, on which to erect churches, in this way.

In general very few new churches were erected after the first two decades of the seventeenth century. However many churches were enlarged or refurbished. Nearly every early church in Valletta was adorned with an elaborate Baroque facade.

In 1593¹ a sacristy was added to the north side of the great "nissen" like structure of St. John's Cathedral. In the first half of the seventeenth century this was enlarged and, to balance the facade of the building, an oratory was added on the south side. Until this time the interior had matched the exterior in austerity but now, and this was a reflection of the age, the interior was lavishly decorated. The Neapolitan artist Mattia Preti was commissioned and he covered the walls and ceiling of the church with sumptuous paintings and sculpture. Many other Valletta churches underwent a similar, if less extravagant, process.

Another important ecclesiastical event took place early in the seventeenth century. The Archbishop of Malta and his curia moved from ~~the~~ Birgu into a new palace in Valletta. The building was started in 1622.² The move is another indication that by this time Valletta was recognised as the Island's foremost town and not simply regarded as a fine, disconnected, setting for stately living.

The building which became the Auberge de Bavaria was erected near the Ghetto valley, at the end of the seventeenth century. It is a

1. Del Pozzo, op. cit. 1715, p.414.

2. T.Zammit, op. cit. 1929, p.51. N.D.

measure of the scarcity of building land within the city that, this home for noblemen, had to be built between two slums, within the Jewish quarter, near a slaughter house.

During the eighteenth century, by contrast with what had gone before, development within Valletta had a much more worldly form. In 1731-32¹ a theatre was erected, in what is now known as Old Theatre Street, on a site formerly occupied by two houses.² Later in the same century the old

16. 'Conservatoria' of the Treasury was demolished and a library erected on the site. There were also a large number of private redevelopment schemes which involved the demolition of existing smaller houses to make room for more palatial structures - the Casa Correa (Old Theatre Street),³ Flores College, or Casa Rospigliosi (Old Bakery Street), Palazzo Parisio (Merchants Street,⁴) and the Casa Bellot (Merchants Street),⁵ to mention but a few. The result of this type of lavish redevelopment, in the central streets, was to further emphasise the contrast in population densities between the central area and the surrounding neighbourhoods.

Much redevelopment work was concerned with providing accommodation for trade and public administration, as opposed to administration of the Order. During the seventeenth and eighteenth centuries the trade of the Maltese Islands developed greatly and a large amount of building work

1. Treas. B.310, f.8.
2. V.Denaro, 'The Manoel Theatre,' M.H, vol. 3, No. 1, 1960, p.1.
3. Treas. B.310.
4. V.Denaro, 'Houses in Merchants Street, Valletta,' M.H, vol.2, No. 3, 1958, p.158.
5. Ibid. p.167.

had to be undertaken in Valletta to provide premises for it. During the same period the Order's interest in the administration of the Maltese islands increased considerably. When the Knights first came to the Island they had been content to rule that part of it which lay around the Grand Harbour. However it was impossible for them to separate themselves from Malta's basic economic disadvantages and their efforts to overcome these involved them, increasingly, in the administration of Island's affairs. Here there was something of a division of responsibility; the Order made the laws and, in many cases, a Maltese civil body, the Università, enforced them. There were two Università, the one based on Mdina had medieval origins whilst the Università of Valletta and the Three Cities had been created by the Order shortly after it came to Malta.

In 1721 the Università of Valletta was provided with a new town hall, or 'Palazzo della Città', in Merchants Street. There is some doubt as to when this building was erected. Hughes¹ states that it was built about 1720 but Denaro² traces in detail the history of the building from the middle of the seventeenth century.³ The 'Monte de Pieta', or official pawn shop, which stabilized money lending rates, took over the old premises of the Università which also stood in Merchants Street.⁴ Between 1748 and 1760 the law-courts, or castellania, also in Merchants Street, were pulled down and rebuilt.⁵

1. op. cit. 1956, p.176, N.D.

2. op. cit. 1958, p.164.

3. T.Zammit, op. cit. 1929, pp.66-67 says the building was erected by Grand Master Zondadari (1720-1722).

4. V.Denaro, op. cit. 1958, p.165.

5. Quentin Hughes, op. cit. 1956, p.183.

It is interesting to note that in the vast majority of redevelopment schemes cited so far - Casa Correa, Casa Bellot, castellania, bibliotheca, Palazzo della Città - the new building incorporated 'botteghe' in the facade. In the case of the Manoel theatre space was required to provide a foyer and mixed development of this type was excluded.

It will be noticed that much of the redevelopment work was concentrated into Merchants Street, so that the form and functions of this thoroughfare underwent considerable evolution. Several other schemes, besides those mentioned, were also completed at the same time in the area; the virtual rebuilding of - the Auberge de Castile et Leon (1744), the Auberge d'Italie (1683),¹ St. James Church (1710),² the enlarging of that part of the Magistral Palace which backs onto Merchant Street during the Mastership of Pinto (1741-73) (the Kingsway facade of the building was enhanced at the same time), the redevelopment of the 'polverista' site (1676) and probably a number of alterations to the Gesu church as a result of heavy damage sustained in the earthquake of 1693.³ If these schemes are added to those already mentioned and the development which took place at St. John's Cathedral and around the market place it can be seen that, in the space of a hundred years, from the middle of the seventeenth century to the middle of the eighteenth, the street was almost entirely rebuilt. Thus if the rate of replacement of buildings is a guide to the vitality of a town then Valletta, and particularly Merchant Street, ^{was} ~~were~~ indeed prosperous.

1. T.Zammit, op. cit. 1929, p.38.

2. Quentin Hughes, op. cit. 1956, p.113.

3. A.O.M. 263, f.138v.

DEVELOPMENT AND REDEVELOPMENT UNDERTAKEN TO PROVIDE
WAREHOUSE FACILITIES.

As the trade of the Maltese Islands expanded an increasing floor area, within the towns lying around the Grand Harbour, was given over to warehousing. In Valletta warehousing concentrated on the Grand Harbour side of the town, predominately along the marina but also within that part of the city lying at not too great a distance from the waterfront.

Prior to the mid-seventeenth century the waterfronts of Valletta, due to their inaccessible and exposed position, were hardly utilized and there was only a small quay, below the del Monte gate (fig. 6:16), which served boats plying between Valletta and the Three Cities. This quay stood in a man-made amphitheatre in the rock which had been cut in order to set the fortifications back from the sea-shore. The set back of the fortifications was apparently not initiated to provide space for a quay. Figure 6:16 shows that it was intended to ring the walls of Valletta with a sea filled moat. Such an obstacle was more effective than the sea alone as it prevented war machines being floated directly against the walls. There are signs that the quarrying of the moat was started on various sections around Valletta but nowhere was it completed. Thus in the early seventeenth century the walls were fronted by a stone apron which proved suitable for the development of merchantile facilities.

Seemingly it was Grand Master Lascaris (1636-57) who first began to exploit these possibilities at Valletta. He built a number of warehouses between the del Monte Gate and a spur of rock, which projected from the landfront to the water's edge and set a limit on development.

At the time there appear to have been few buildings in the area apart from the de Lisse church (1618).¹ Once development began all the available land was soon taken up but Lascaris overcame shortage by driving a tunnel, "la mina del Lascaris", through the spur of rock to the foreshore beyond. Here he built a wharf, which still bears his name, and another line of warehouses.

Nicolas Cotoner (1663-1680) extended Lascaris wharf and erected warehouses.² In 1691³ under Grand Master Carafa (1680-1690), also building up a portfolio of investments for his 'fondazione', more warehouses were put up in the vicinity of the del Monte Gate.⁴ A number of grain stores were built on the Marina by Grand Master Perellos (1697-1720) and Manoel de Vilhena (1722-1736) extended the zone of warehousing along the Grand Harbour flank of Floriana.⁵ Pinto (1741-73) added a group of sumptuous warehouses and this completed the development of a zone of warehousing which extended from the del Monte Gate to Floriana Lines. In 1774⁶ a customs house was built just outside "la mina del Lascaris" to serve the area.

The Marsamxett harbour, in spite of its disadvantages, was not entirely neglected by shipping. From a very early date a small island, in the centre of the harbour, was used for quarantine purposes by people and goods coming from suspect lands. As trade increased so did the number

1. A.O.M. 6935.
2. A.O.M. 261, 1667, f.72.
3. A.O.M. 263, f.104.
4. R.M.L. 1305, ff.16-18.
5. Treas. B. 310, 311.
6. T.Zammit, op. cit. 1929, p.72.

of warehouses to store goods in quarantine.¹ Manoel Island, as it came to be known, was attached to the mainland by a bridge around 1730.²

A small number of warehouses were built on the Marsamxett marina of Valletta in 1674.³

It might be expected that with so much pressure on space in Valletta there would be a tendency to build upwards. This did not happen to a marked degree. Certainly a number of buildings were originally put up in a single storey form and heightened at a later date. This was the case with the Auberge d'Italie⁴ and the bakehouse of the Order had an additional storey built on for warehousing.⁵ Redevelopment usually resulted in rather taller buildings than had previously existed but generally there were very few buildings which had more than three stories. It seems very probable that the Order exercised careful control over the height of buildings. The Knights required intervisibility between the various elements in Valletta's defences and particularly between the cavaliers, St. Elmo and the Palace. In 1638 a householder in Valletta was ordered to remove a structure from his roof which interfered with the view from the Palace⁶ and in the eighteenth century, when Floriana was built, it was ordained that no building should project above the line of sight between Floriana Lines and Valletta's land front.

1. A.O.M. \X265, 1701, f.65.

2. Treas. B. 311, f.14v.

3. Treas. B. 300, p.12 and A.O.M. 262, f.35.

4. T.Zammit, op. cit. 1929, p.38 and 61. Quentin Hughes, op. cit. 1956, p.145.

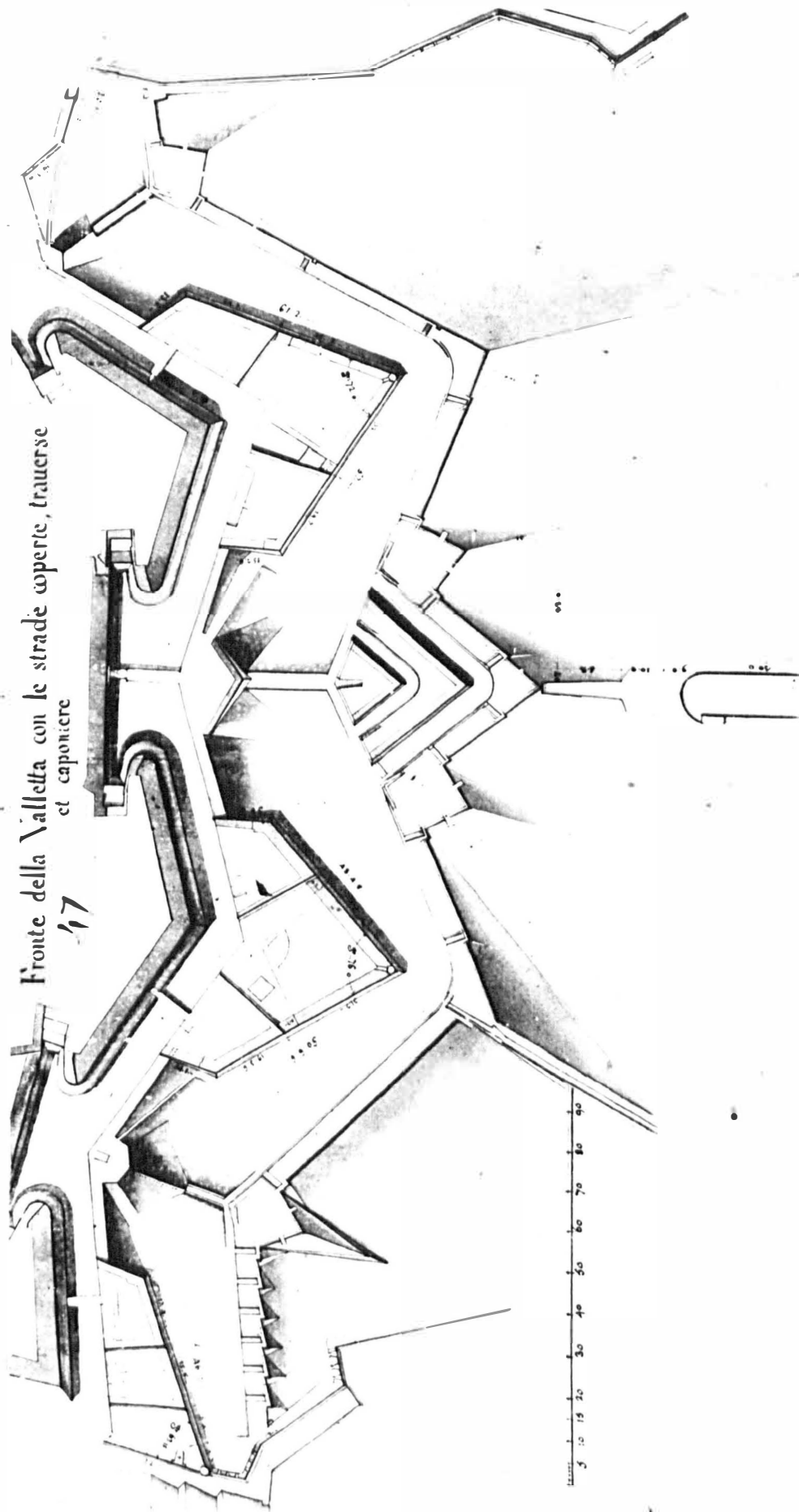
5. A.O.M. 272, f.100v.

6. A.D.M. 256, f.178.

Fig. 6:25 - An Eighteenth Century plan of the land
front of Valletta.

R.M.L.

Fronte della Villetta con le strade coperte, tranverse
et caponiere



THE WATER SUPPLY OF VALLETTA.

One of the great disadvantages which Sceberras peninsula suffered as a town site was the lack of an assured water supply. During the building of Valletta cisterns were excavated¹ to store rainfall and water also had to be brought to the site to supply the needs of the army of workmen. Fortunately the situation was eased, shortly after work on the fortifications began, by the discovery of a spring in the vicinity of the ghetto valley. The spring did not supply enough water to satisfy the needs of the city and when housing regulations were issued it was decreed that all dwellings must be equipped with a cistern to store rainwater collected from the roof.

Early in the seventeenth century Grand Master Aloph de Wignacourt (1602-22) decided to give the city a more certain water supply. Wignacourt had an aqueduct built from the upper, perched, water table to Valletta. The pipeline which was less than a foot in diameter, tapped a group of springs in a valley just to the east of Mdina. The aqueduct ran, intermittently, above and below ground to the city where it fed a number of public fountains. These were not simply functional being built in the florid style of the day. Additional fountains were erected in the middle of the seventeenth century.²

Even with the building of the aqueduct Valletta still lacked a secure water supply. The first act of an army besieging the city would

1. Bosio, op. cit. 1602, vol. III, p.781.

2. A.O.M. 272, f.89v.

have been to sever the pipeline. The Order, therefore, insisted that all private cisterns should be kept in good repair and used.

The question of water storage capacity was a powerful determinant to Valletta's ability to resist a siege. In 1723 an elaborate survey of the storage capacity of Valletta and the Three Cities was completed.¹ At the time there were found to be thirteen public 'gebbie' (very large storage tanks) within Valletta,² some forty public cisterns and 1,637 private cisterns, the latter having a capacity of 146,702 barrels.

The author of the survey made several suggestions to improve the water supply position. He proposed a scheme to bring water from the Marsa to Valletta by concealed pipes at sea level. He proposed the storing of run off water from the streets and restrictions on irrigation at times of water shortage. None of these suggestions appear to have been implemented.

1. R.M.L. 195, 'Ristretto generale di tutte le cisterne, e Gebbie pubbliche, e private.'
2. Ibid. f.6.

THE THREE CITIES.

~~The~~ Birgu (Vittoriosa), L'Isola (Senglea), Bormla (Cospicua).

The rapid growth of Valletta, in the latter part of the sixteenth century, had an adverse effect on the surrounding towns. For a while Vittoriosa, Senglea and Bormla were depressed but with the revival of the economy and the increase of population all the urban areas, around the harbours, began to grow speedily.

From the time the Order failed to complete the Valletta manderaggio and arsenal, allowing the galley squadron to remain based upon Galley Creek (between Senglea and Vittoriosa), the functions of the capital were split between the two sides of the Grand Harbour and the two areas developed in a complementary manner. At first, however, this must have been far from obvious. When, in 1571, the Order moved the convent from ~~the~~ Birgu to Valletta, the Three Cities must have been depressed by the removal of the auberges and several service industries. The Hospital was moved from Vittoriosa to Valletta in 1575. It appeared to be only a matter of time before the Galley Squadron and the arsenal followed. Both remained and with the quickening of the Island's economy, the growth of trade and, particularly important to the Three Cities, the re-establishment of the Corso on a larger scale, a renewed emphasis was placed on Galley Creek. The nearby urban areas started to show a fairly rapid rate of population growth. The first town to benefit from this expansion seems to have been Senglea (table 6:1) and population increase came rather later to ~~the~~ Birgu and Bormla.

SENGLEA.

A glance at the street plan of Senglea immediately suggests two things. Firstly, a large number of irregularities were allowed into the grid iron plan, which probably indicates that building here was not too carefully controlled. Secondly, the present street plan was not laid out at one time. From the point of view of fortification engineering the following series of events could be argued. When building up of the town started a generous working space would be preserved immediately inside the fortifications. For similar reasons the tip of the peninsula was probably left vacant. On theoretical grounds, then, the middle section of the town plan was laid out first. The streets which now lie immediately inside the landward defences are wider and more regular than those further in, which also suggests that they were laid out at a later date. The crowded and irregular streets towards the end of the peninsula are reminiscent of the later slum development at Valletta and may also represent later growth, brought about by land scarcity and population pressure. The effects of this intense space utilization can still be seen in the townscape today. (Fig. 6:26).

During the seventeenth and eighteenth centuries there was probably a great deal of redevelopment in Senglea. Many inhabitants of Senglea made sizeable fortunes with the corso or in trade and an eighteenth century manuscript¹ describes Senglea as a town populated by seamen and mentions a number of 'palazzi' built there by ships' captains. Senglea benefited in other ways from the increasing maritime activity.

1. R.M.L. 141, f.321v.

Fig. 6:26 - Overcrowding of urban property at Senglea.

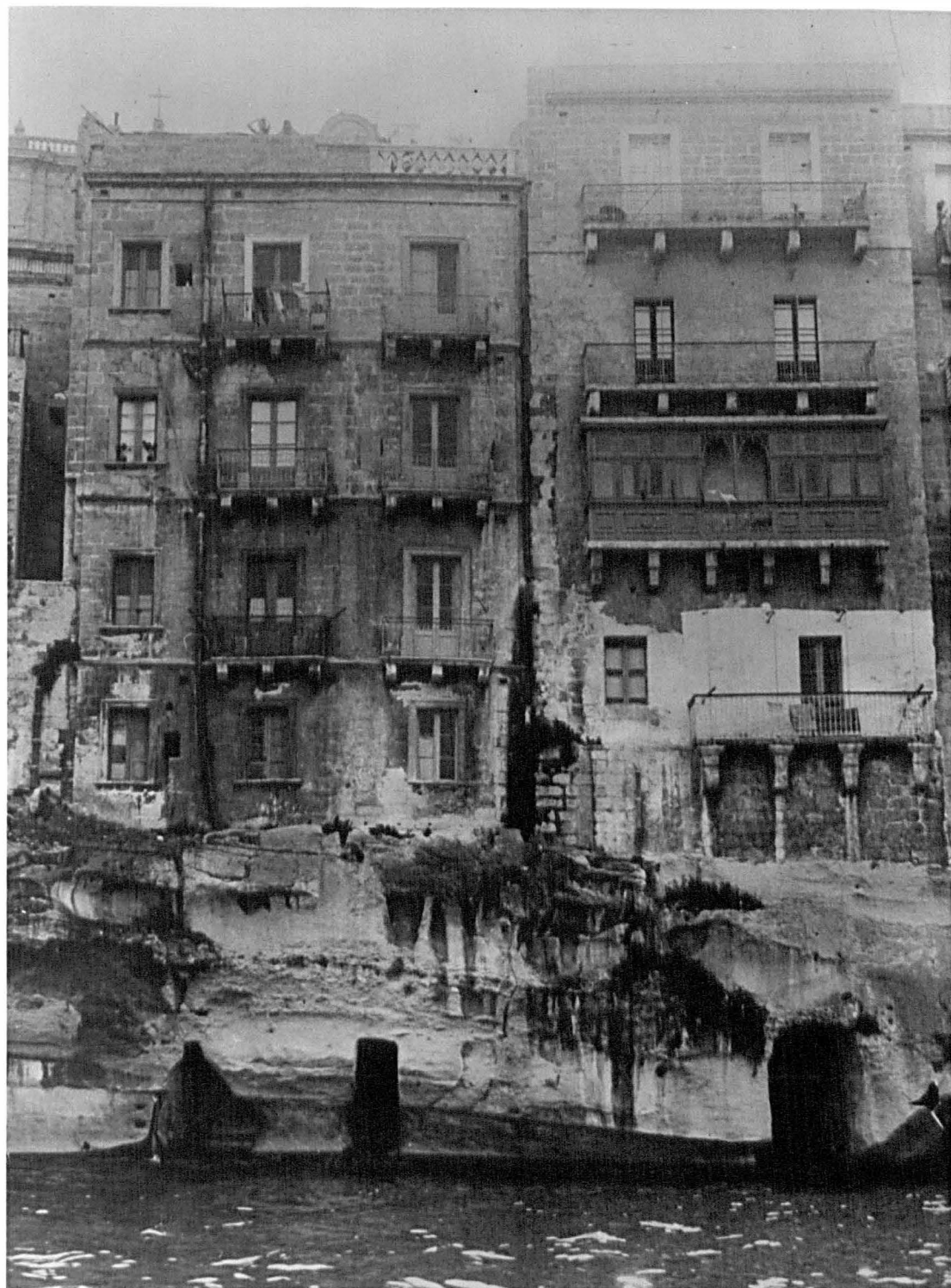
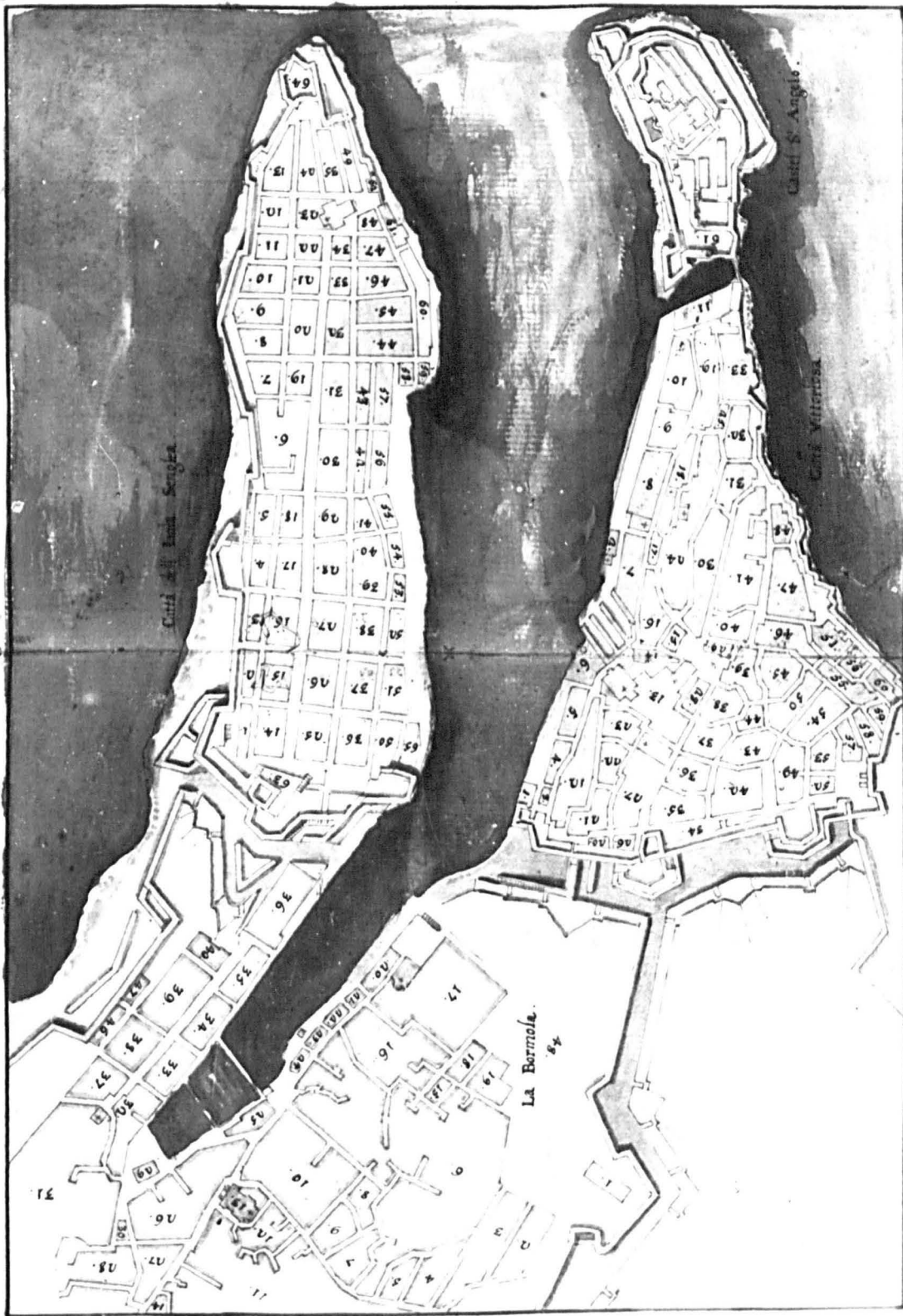


Fig. 6:27 ~ A plan of Birgu, Senglea
and part of Bormla c.1723.

R.M.L. 195.



By the beginning of the eighteenth century the Galley Creek, and its shores was no longer large enough to contain all the Island's shipping activity. It became necessary to expand into French Creek which lies along the other side of the Senglea peninsula. This creek was exploited during the first half of the eighteenth century and again development took place on the apron of rock left between the fortifications and the sea. During the rule of Grand Master Vilhena (1722-36) a mole was built along most of the Senglea shore of French Creek¹ (figure 6:28). Once these works were complete warehouses, workshops, storehouses, accommodation for crews and the shipbuilding industry, both state run and commercial, followed.

The Senglea peninsula had originally been developed by members of the Order as a garden area² and in the first half of the eighteenth century the urban land-use patterns still showed traces of this growth phase.³

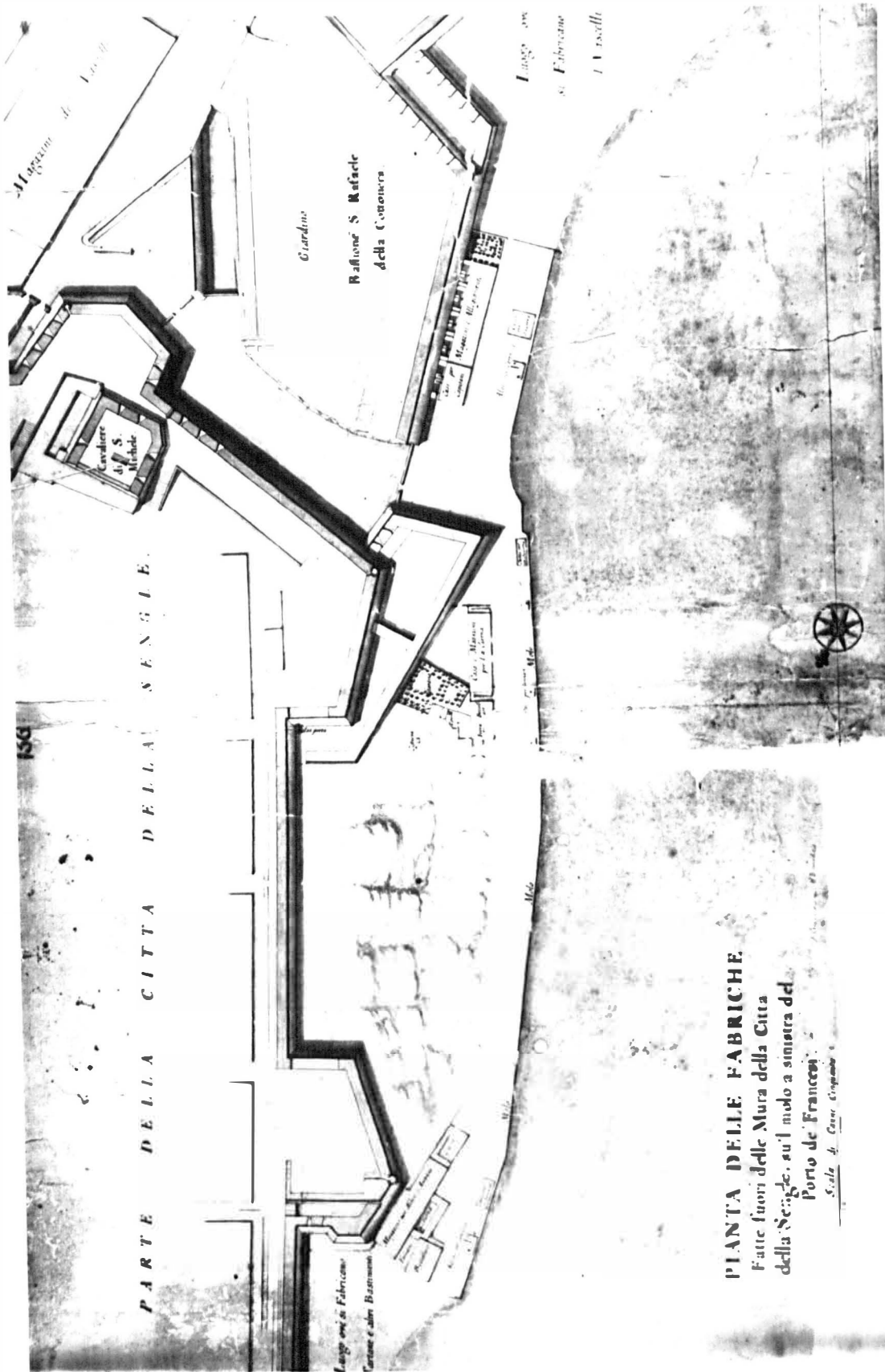
THE BIRGU.

Senglea had become, by the early part of the eighteenth century, probably the most economically buoyant of the Three Cities. Aesthetically, too, it was in great part more attractive than Bormla and ~~the~~ Birgu. During the first half of the eighteenth century ~~the~~ Birgu could be described as being "not very well built"⁴ and it epitomised all the problems of urban congestion afflicting parts of most Maltese towns and town-villages, under the Order. ~~The~~ Birgu's entwined, medieval pattern of streets (there seem to be two basic elements in the street plan, i.e. figure 6:27). Firstly

1. Treas. B.310.
2. Bosio, op. cit. 1602, p.242.
3. Treas. B.290 and Treas.B.310.
4. R.M.L.41,320v.

del |)

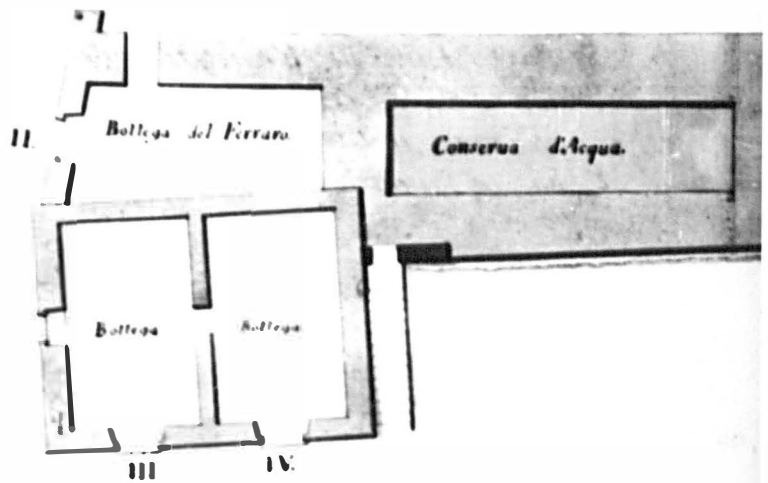
Fig. 6:28 - Part of the foreshore of Sanglea
adjoining French Creek showing the ship-
building and repairing area.
The next two illustrations are enlargements
of this zone.



PIANTA DELLE FABRICHE
Fatte fuori delle Mura della Città
della Sengle, su'l lado a sinistra del
Porto de' Francesi
Scala di 10000 Piedi

RACINTO DELLA CITTÀ SENGLE

I Magazzino dell'Albergo de Vascelli Mercantili



Molo del Porto de Francesi



Fabbrica

PORTO DI FONDAZIONE

O Dietro L'Isola

Scala

adjacent to St. Angelo are a group of streets focusing on the fort and secondly, towards the landward defences, a series of later growth rings) had survived the mid-sixteenth century phase of redevelopment. This congested plan prohibited further growth and at the same time added difficulties to the practice of trade.

The population of ~~the~~ Birgu apparently grew very slowly at the end of the sixteenth century and the beginning of the seventeenth century (table 6:1). Senglea, at this time, was growing more quickly, however, as the harbour area continued to expand its economic activities ~~the~~ Birgu, too, started to attract more inhabitants. Population growth in the whole area became excessive and created a number of problems. In 1634¹ the Order commanded that no more private houses were to be built in Senglea and ~~the~~ Birgu. But whilst this might prevent growth in a normal sense it did not prevent the overcrowding and subdividing of existing properties. Subdivision of property was commonplace and in 1645, even the old Birgu Hospital of the Order was partially divided to provide living accommodation.²

In 1666 the Order tried to check the forces bringing about congestion, by prohibiting further movement of population into Valletta and the Three Cities.³ It was very difficult to exercise control and clearly what measures were taken proved ineffective - partially because the population already living in the town⁵, continued to grow. About 1740⁴ the population of ~~the~~ Birgu was estimated at 3,600.⁴

The problems posed to defence, trade and public health by these

1. A.O.M. 256, f.131.
2. A.O.M. 1184, ff.413, 414.
3. R.M.L. 1210, f.142.
4. R.M.L. 141, f.321

conditions are obvious and it is not surprising that when the plague struck, in 1676, Vittoriosa was the town which suffered the most heavily.

In spite of ~~the~~ Birgu's growing squalor the Order were able to resist the pressures of overcrowding, where its essential interests were represented. On the waterfront, fringing the Galley Creek, stood many buildings associated with the construction, provisioning and administration of the galleys. Here, on what was certainly the finest waterfront of Malta, there were several palaces which housed officials of the squadron and the arsenal.¹

As a result of the maritime activity in Galley Creek, both martial and commercial, much floor space within the Three Cities, in proximity to the waterfront was given over to warehousing.²

BORMLA.

The origins of Bormla are obscure, its growth was often haphazard and the desirability of its existence was frequently questioned.

It seems probable that Bormla grew up after the outward growth of ~~the~~ Birgu had been contained, by the defences built in the early years of the Order's rule. The existence of such a suburb could obviously be an embarrassment to the defenders of ~~the~~ Birgu and Senglea. Prior to the Siege a large number of houses in Bormla were demolished to forestall such embarrassment.³

During the Siege what remained of Bormla must have been largely destroyed but the settlement quickly recovered from this razing. There is a

1. Ibid. 320v.

2. P.R.O, C.O. 163, 34.

3. Francesco Balbi di Correggio, The Siege of Malta 1565, English Translation, Copenhagen, 1961, p.41. Bosio, op. cit. 1602, p.583.

reference to an inhabitant of Bormla in a document of 1569¹ and in 1575 the population was estimated at 1,200 persons.² Bormla was created a parish in 1584.³ During the later part of the sixteenth century the population of the new parish showed little increase, provided the estimate for 1575 can be accepted as tolerably accurate (table 6:1). Towards the end of the second decade of the seventeenth century the numbers living in the town started to increase rapidly and as Bormla remained unhampered by walls until c.1640 it was well placed to take the overflow of ~~the~~ Birgu and Senglea. This was not the only spur to growth. As the utilization of the waterfront of the Galley Creek became more intensive the line of warehouses, stores and docks spread until it embraced all those areas of the shore which were suitable for development, including the part adjoining Bormla. This indeed seems to have been the most important factor promoting the town's growth for it is noticeable that the radial elements in Bormla's plan focus on the inner areas of Galley Creek rather than on the adjoining towns.

In Bormla, as in Senglea and ~~the~~ Birgu, there was a strong conflict of interests between the needs of the Galley Squadron, the corso, commercial shipping and housing, on the one hand and the desires of the military engineers on the other. One group of interests demanded the fullest possible use of land adjoining Galley Creek whilst the other insisted upon the maintenance of the glacis together with the working spaces immediately within

1. A.O.M. 300, 'Liber Capitali Generalis 1569,' f.102.
2. R.M.L. 643.
3. A.Ferres, op. cit. 1866, p.295.

the fortifications and was generally troubled by the defensive problems posed by urban overcrowding and the presence of Cospicua. It was to overcome these problems and to take in outlying higher ground, that Margharita lines¹ were built in c.1640 and a few decades later, Cottonera Lines were started.² The latter fortifications also enclosed a shelter area to provide a refuge for country persons, in the event of an attack.

Prior to the erection of Margharita Lines building control, in Bormla, was apparently strict³ and even when the new fortifications were completed the military engineers remained worried by the suburb. It was recommended that a convent in Bormla should be evacuated as it prejudiced the defences of ~~the~~ Birgu and Senglea.⁴ Yet at the same time, and this illustrates the conflict of interests well, from 1631 to 1675 the Order were granting house sites and building licences in the town,⁵ although they were careful to guide growth into that part of the town furthest from ~~the~~ Birgu - Senglea defences. At least part of this growth phase is probably represented by blocks 2, 3, 4 and 5 on figure 6:27.

After this period of expansion there is no record of any further building licences being granted until 1717. In this year another group of planned streets (figure 6:29) were added to the town and house sites on them sold by the Order, at a fixed price. Conditions attached to the sale of the land were simple; the property had to be walled within two years and the building line had to be preserved.⁶

1. A.O.M. 256, f.188.

2. A.O.M. 261, 1670, f.167.

3. A.O.M. 256, Lib. Conc. 1624 - 38, f.75.

4. A.O.M. 258, 1645, f.4.

5. A.O.M. 1184, 1185.

6. A.O.M. 267, ff.24v 25.

Fig. 6:29 - A 1718 plan of part of Bormla showing a
new group of streets laid out on the
south side of the town.

M. 110.
9/ 17 18.

*Pianta delle Nuove Strade che si possono fare, nel Recinto del Forte di S.^a Margherita
con l'Emendazione delle altre Strade di Bormola.*



Fig. 6:30 - Aerial photograph (1957) of Senglea,
Birgu and Bormla. The fortifications
surrounding Bormla are Margharita lines
and the outer groups are Cottonera lines.



PAULA.

Shortly before the Order forbade the building of private houses in Birgu and Senglea, a more constructive attempt seems to have been made to ease overcrowding with the founding of 'casal Nuovo' or Paula. There is no evidence at present to suggest whether or not this piece of planning was motivated primarily by the desire to relieve congestion or simply to profit from the appreciation of land values which would follow the establishment of the town.

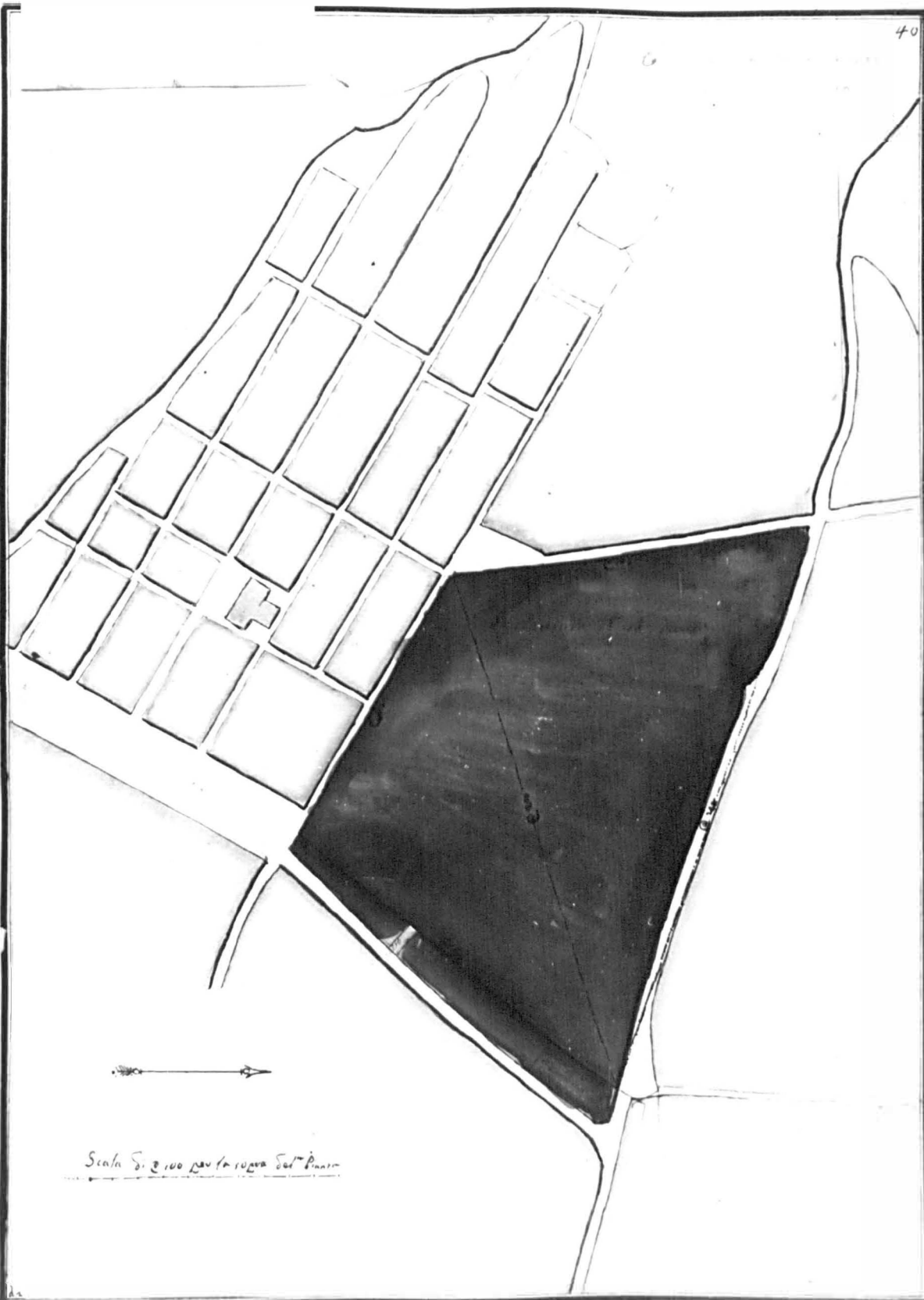
In 1626¹ Grand Master de Paule decreed that a new town should be laid out in the fief of Marsa, which the Order owned. There is little evidence relating to the new casal's first years but early in the sixteen thirties a church was built for the settlement. There seems to have been little eagerness on the part of the Maltese to take up building lots on the rectilinear plan, probably because Paula was too far from the existing centres and unfortified. From the first, certain privileges were offered to attract inhabitants and inducements had to be proffered once again in the reign of de Paule's successor, Lascaris (1636-57).³ By 1647⁴ ^{cap}casal Paula contained fifty houses and a population of one hundred and sixty persons.

1. Abela, op. cit. 1647, p.94.
2. A.O.M. 256, f.101v.
3. R.M.L. 152, pp.230-231.
4. Abela, op. cit. p.94.

Fig. 6:31 - Eighteenth Century plan of Paula.



Treas. B.290.



Scala S. 1:100.000. Carta 100.000. Ed. 1910.

FLORIANA.

In 1634 Paolo Floriani came to Malta and suggested the building of a new line of fortifications across the neck of Sceberras peninsula.

Work on this project - Floriana Lines - had not progressed far when it was discontinued in favour of a new ring of fortifications - Margharita Lines - around the Three Cities.¹ It was decided to strengthen the existing front of Valletta,² demolish that part of Floriana Lines which had been built and sell off the stone.³ But in the following year, 1640, the Floriana scheme was reappraised and after the advantages of denying an attacker a direct assault upon Valletta, providing a shelter area for country people, without having to overcrowd the capital with the attendant risks of disease, had been pointed out the project was restarted. It was also mentioned that Valletta could expand into the area.⁴ Possibly, fears that a suburb within the fortifications might mortgage their effectiveness led to the lapsing of this idea. However, the pressures on housing continued to increase and, as we have already noted, in 1666 the Order was forced to decree that no more persons, from the countryside, were to come and live within Valletta and the Three Cities. In 1672⁵ the council decided that a suburb would be built within Floriana. Shortly after this date the Island was visited by plague, thousands died and by the time the epidemic was controlled there was no need to build a new town to cope with pressures on housing.

1. A.O.M. 256, 1638, f.188.

2. A.O.M. 257, f.46v.

3. Ibid. f.37v.

4. Ibid. f.46v.

5. A.O.M. 262, f.12.

By the second decade of the eighteenth century the population had revived and with it proposals for the building of new suburbs. In 1717 the planned extension to Bormla was laid out and in 1724 the Floriana proposal was taken and examined by a commission¹ from the following view points - were the houses needed? would the project be profitable to the Order and the Maltese? How would the fortifications be affected?

The commissioners were quickly satisfied on the first two points and after "mature consideration" they thought that, with proper precautions, the effectiveness of the fortifications would not be prejudiced. They suggested a list of safeguards:-

- 1) A glacis, a muckett shot wide, was to be maintained outside the walls of Valletta.
- 2) The buildings, in the suburb, should be low enough to allow intervisibility between the land front of Valletta and Floriana Lines.
- 3) The streets should be arranged so as to be easily infiltrated from the walls of Valletta.
- 4) Cellars should not be allowed beneath buildings.

At this time there were already a number of developments between the two groups of fortifications and these influenced the form of the new suburb. As early as 1584² the Sarria Chapel had been built, outside the walls of Valletta. There may have been some houses near this building for when the Floriana fortifications were being built we know at least one house had to be knocked down.³

1. A.O.M. 267, ff.232v - 233v.

2. Del Pozzo, op. cit. 1715, p.249.

3. A.O.M. 1185, f.45.

Early in the seventeenth century a monument was built, to commemorate the completion of Wignacourt's aqueduct and about the middle of the same century, Lascaris laid out a 'pallamaglio' court. The existence of these structures limited the area which could be devoted to housing and pushed such developments to the southern side of the peninsula. This was, in any case, the safest and most convenient area for development as it lay behind the Floriana hornwork, (figure 6:15) out of range of besieging artillery and close to the developing waterfront of the Grand Harbour. Figure 6:32 shows that part of Floriana which was built up first. The blocks on the northern side of the peninsula were added later and, as in the case of Valletta, it is, by and large, the later developments which became slums (figure 6:22).

The building up of Floriana probably started very soon after 1724 - by 1728 the street plan had been laid out and at least one block of buildings completed.¹ The church of St. Publius was started in 1733.² By 1766 twenty blocks of the suburb had been built and at this time, some indication of the numbers living in the suburb is given by the fact that, approximately,³ four hundred Floriana men were liable to service with the militia.

Floriana displays many urban features of the eighteenth century with its triumphal archway spanning the entrance, wide thoroughfares, 'pallamaglio' court, gardens, barracks, monuments and general spaciousness.

1. Treas. B. 300, f.23.
2. A.Ferres, op. cit. 1866, p.231.
3. A.O.M. 1066.

Fig. 6:32 - In this print the towns and
fortifications built by the Order around
the harbours are virtually complete.
Only Fort Tigne is missing - c.1750.

R.M.L.

DEVELOPMENT ON THE NORTH SHORE OF MARSAMXETT.

At first sight it might seem surprising that, during the period of the Order, the north shore of Marsamxett was not subject to urban developments. The reasons for this were basically physical. Compared with the Grand Harbour, the Marsamxett provided inferior shelter, during rough weather the entrance is more hazardous and the inner creeks more disturbed. But above this the potential of the Grand Harbour was so great that there was simply no need to develop Marsamxett, as table 6:2 shows:-

TABLE 6:2

	<u>Area (Square Miles)</u>	<u>Length of Shoreline (Miles)</u>
Grand Harbour	.849	9.666
Marsamxett	.537	6.500
Marsaxlokk	1.875	6.666

Source. "The Statistical Abstract of the Maltese Islands," 1952.

From the earliest years of the Order's reign Marsamxett was used as a quarantine harbour.¹ Later a Lazaretto was built on Manoel island (M.R.5573) together with numerous warehouses for the storage of goods. The isolation of the northern shore of Marsamxett made it more suited as a quarantine area than as a centre of trade. The presence of the Lazaretto may have discouraged settlement.

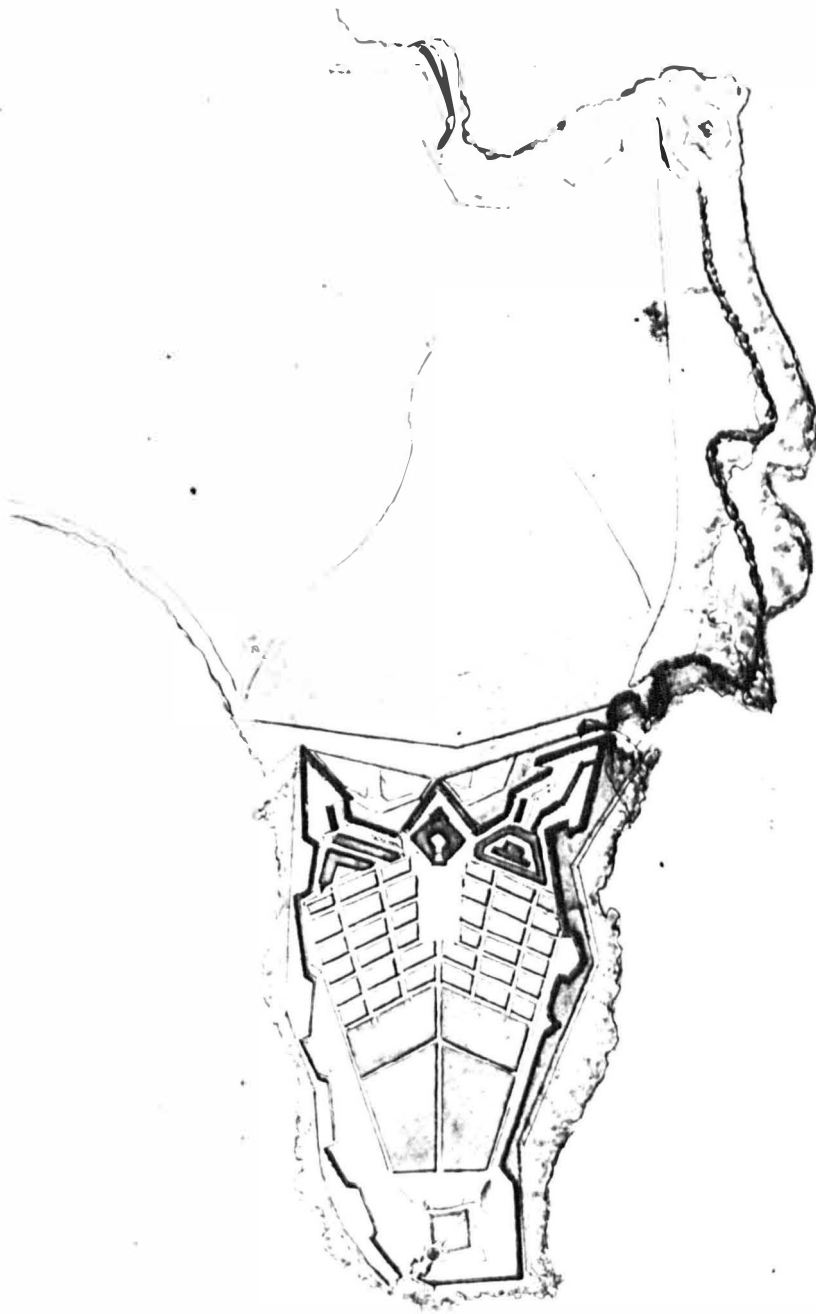
During the second half of the seventeenth century the northern flank

1. A.O.M. 91, Lib. Conc. 1561-67, f.64.

of Valletta, came to be regarded as ill-fortified. Proposals were made for fortifying Manoel island but it was not until the rule of Manoel de Vilhena (1722 - 36) that a fort was erected. Work started in September 1723¹ and was completed in 1732. At about the same time as the quarantine island was being fortified proposals were made for a fortress on Dragut point, (M.R. 5673) at the mouth of Marsamxett. These proposals seem to have included a scheme for a settlement within the fortifications (figure 6:33). The building of the new works was delayed until the end of the eighteenth century and then only Fort Tigne was built.

1. A.O.M. 267, f.223.

Fig. 6:33 - An Eighteenth Century plan showing a
proposed town to be built behind Fort Tigne.



MDINA (NOTABILE or CITTA' VECCHIA).

In contrast to the harbourside urban settlements the medieval capital of the Island - Mdina - failed to respond to the stimulus of the Order's presence. The basic reason for this seems to have been the inconvenient position of the old capital, seven miles from the harbours.

In the Island's defensive system Mdina was of limited value. During the Siege it had been another strong point which the Turks had had to watch and divide their forces on, it had been a useful link in the communications chain with Sicily and a base from which the Order's cavalry had operated, often quite decisively, during the campaign. But the cost of continuing to provide these facilities was high particularly as the harbourside fortifications were growing in size, strength and complexity. Apart from requiring a garrison and artillery Mdina's defences had to be maintained and developed to keep pace with the changes in fortification technique. The Order had great difficulty in deciding whether or not it wanted to meet the cost involved. The Maltese, for their part, showed more interest in the harbour towns than the old capital although, emotionally and nationalistically, Mdina remained the centre of their country.

During the artificial conditions of the Siege Mdina was heavily populated but immediately afterwards most of the sojourners moved out and many of the inhabitants went to live in ~~the~~ Birgu. At this time there were probably very few people remaining in Notabile.¹ The rise of Valletta, the growing control of the Island's affairs by the Order and the establish-

1. Della Historia di Malta, 1565. Printed work in the Royal Malta Library.

fortifications were also ruined.¹ Early in the eighteenth century talk of abandonment was again in vogue² but Città Notabile survived until the Mastership of Manoel de Vilhena (1722-36) during whose rule Mdina was largely rebuilt. It seems probable that during the earthquake of 1693 the eastern quarter of Mdina was far more heavily damaged than the western part of the town. Certainly the western quarter contains most of the remaining fifteenth century buildings, whilst the east holds the majority of the modern structures, including those erected in Vilhena's rule. It is probable that when the Grand Master decided upon the rebuilding of Mdina there were many sites in the old city with ruined or delapidated buildings on them. Between the years 1723 and 1728 the fortifications of Mdina were largely rebuilt.³ After this a whole series of new public buildings were erected within the town; Vilhena Palace, 'Banca Giuratale', the Seminary, the Archbishop's Palace and the 'Corte Capitanale'. Figure 6:34 shows the town as it was in 1723 with the proposed new fortifications sketched in. Figure 6:35 (c.1728) shows these works in their completed form and a number of small alterations which appear to have been made to the street plan, particularly near the gateway standing to the right of the central bastion.

Much of the property in Mdina was privately owned and little material relating to it can be found in public archives. In 1750 the "Cabreo della Citta Notabile" was compiled and this gives much information on the

1. Università 23.
2. Il Cav. de Mondion, Recapitolazione della opere di fortifi.ni fatte nella isole di Malta et Gozo dell anno 1722 fino all anno 1732, S.J.G.
3. Ibid.

Fig. 6:34 - Mdina - 1723.

R.M.L.

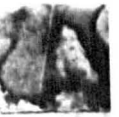
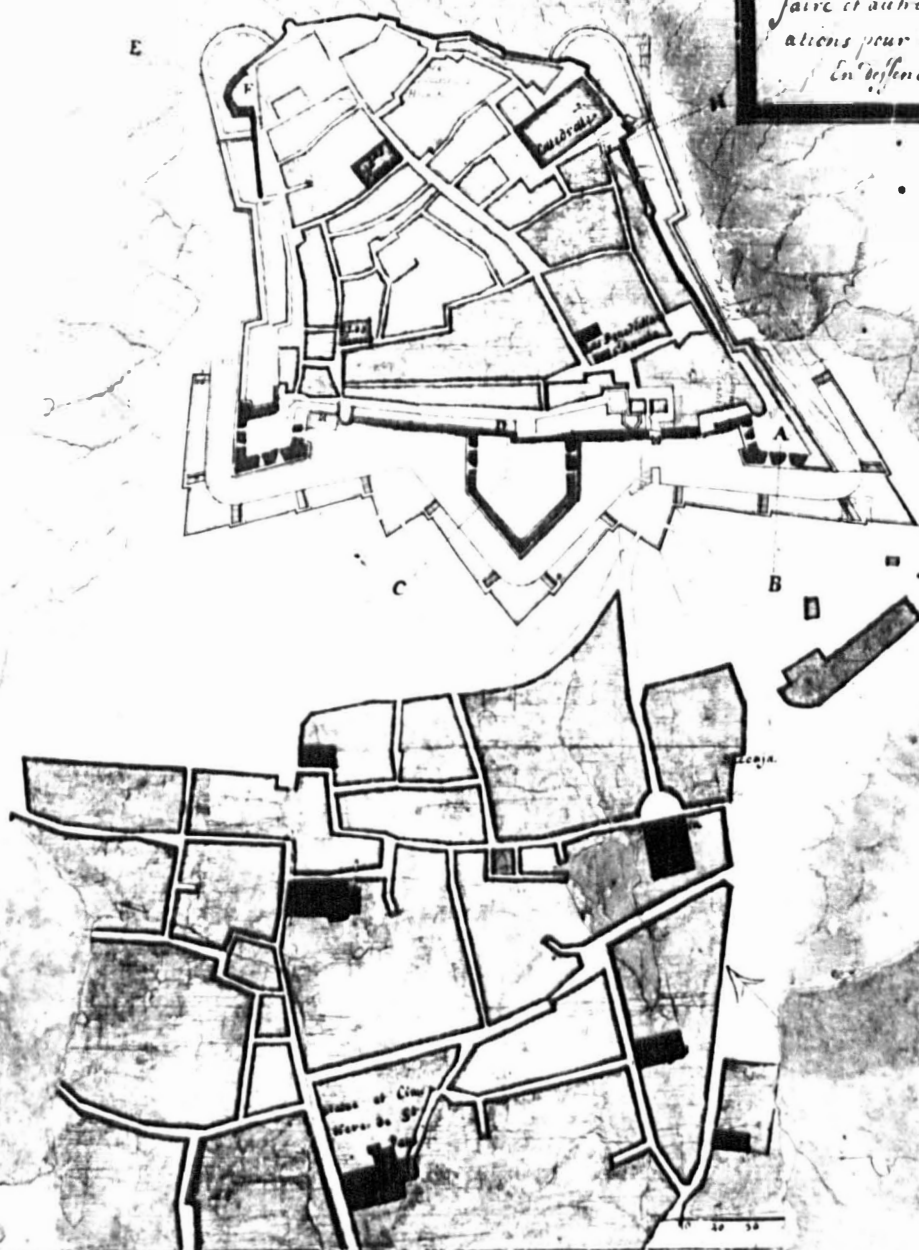


Fig. 6:35 - Mdina - 1728.

PLAN ET PROFILS
DE LA CITTE VIELLE
 ou
CITTE NOTABLE DE MALTE
avec le Poye d'un
chemin ouvert à
faire et autres Repar-
ations pour la mettre
En defence.



property held by the Mdina Università. The town possessed an armoury, slaughter house and gunpowder factory. The Università also owned a number of shops and warehouses but it is clear from the number and scale of these structures that Mdina had only a small amount of trade and industry, in spite of Vilhena's attempts to revitalize the Città Vecchia.

The street plan of Mdina is still very similar to the layout which existed in the late Middle Ages. There is a degree of regularity about the plan which suggests it may be based on an earlier, more geometrical, Roman pattern.

GOZO.

When the Order came to the Maltese Islands Gozo was probably the most prosperous island in the archipelago, at least this was the impression it made on the Order's commissioners.¹ The population at the time was possibly as high as 5,000.² The distribution of population was radically altered when, in 1551,³ the majority of the inhabitants of Gozo were removed by the Turks in the course of a large scale raid.

The whole pattern of man's imprint on Malta was altered during the reign of the Order - the distribution of roads, towns and villages was reshaped; the whole social structure and outlook of a large section of the population entirely changed. On Gozo this did not happen. The medieval patterns remained. The capital of the island stayed in the centre, remote, withdrawn, far from danger and strategic importance, the coasts remained abandoned.

The Order had no great interest in the island as there were no important harbours to defend or develop. The defence of Gozo was a perpetual problem and it was never completely overcome. Repeatedly during the early years of the Order's rule attacks were launched on Gozo and its inhabitants carried off into slavery. Besides the great raid of 1551 there were others in 1560, 1572, 1574,⁴ and 1583.⁵

1. Bosio, op. cit. 1602, p.30.

2. Louis de Boisgelin, op. cit. 1805, vol. II, pp.15-18.

3. Bosio, op. cit. 1602, p.304.

4. J.E.H.Gatt, Guide to Gozo, Malta, 1937, p.107. This book is largely based on a manuscript Il Gozo Antico, Moderno, Sacro e profano, (1746) by the eighteenth century Maltese historian Agius de Soldanis.

R.M.L. 142.

5. Del Pozzo, op. cit. 1715, p.242.

Numerous other raids were driven off before they were able to collect any slaves. Such attacks are recorded in 1598, 1599, 1645 and 1722.¹

The centres of population had been driven well inland during the Middle Ages and the punctuated security, offered by the Order, was insufficient to bring about the establishment of new coastal settlements.

The Knights put little money into the northern island, for they had not much land there, nor were they interested in the small, inadequate, harbours. A comparison of the economic history of Malta, with that of Gozo, during the period of the Order, shows just how much the former owes to its harbours - without them Malta would have remained just a "rock in the middle of the sea far from help and comfort."²

Gozo was so unsafe during much of the Order's rule that whenever an attack was feared boatloads of non-combatants were brought to Malta.³

The medieval capital of Gozo - the Castello - had a site which, in many respects, was similar to that of Mdina. Like Mdina the Castello had its Rabat and was the seat of the Università. Under the Order the histories of Mdina and the Gozo Castello are similar - both went into decline, lost status and were, to a large extent, abandoned. For instance in 1701 a lengthy list was compiled of vacant sites, or sites occupied by derelict buildings, in the Castello.⁴ Another indication of the town's lack of vitality during the Order's rule is the large number of buildings, dating from the late Middle Ages which still remain in the Castello. An

1. J.E.H.Gatt, op. cit. 1937, p.109.

2. Università No. 3, 1466, A.D, f.108v.

3. e.g. 1643, A.O.M. 257, f.143.

4. A.O.M. 265, f.42v.

interesting feature of this process of urban decay is that parts of the town have gone through a full cycle of development and returned to agricultural usage - the arrangement of the small cultivated plots being determined by the ground plan of the former buildings.

Repairs to the Castello were carried out on a number of occasions and a series of coastal towers were built. At the beginning of the seventeenth century Grand Master Garzes erected such a building.¹ In the middle of the next century the Gozo Università erected a number of towers, ~~and the Order provided several more.~~ In 1643 it was suggested that the Castello was abandoned and a new fortress built at Masalforn. Later in the century Valperga reviewed this idea and rejected it.

In the seventeen-twenties the idea of providing a coastal fortress for Gozo was again current and Chevalier de Tigne designed a small, fortified town to stand on Ras-el-Tafal, overlooking the channel separating Malta and Gozo.² Again the scheme was delayed, probably due to a lack of financial resources. However, in September 1749, Chevalier Chambray offered to meet the cost of building the fort as designed by Tigne.³ Work was started in the same year and the diary of the engineer in charge, Marandon, still exists.⁴ It is possible to trace the course of the project from this record.

The fortifications were not completed until 1761 at which time the rectilinear street plan was laid out. Regulations governing the erection

1. J.E.H.Gatt, op. cit. 1937, p.44.
2. Chevalier de Tigne, Histoire de Malte, 1723, Manuscript at S.J.G.
3. Ciantar, op. cit. 1780, p.345.
4. Narrativa della Opere di Fortificazione fatte de giungno 1732 a mayo 1760. S.J.G.

of buildings were issued at about the same time. These regulations were largely concerned with preserving the building line and for the rest gave a list of things it was possible to do without further authority. Building had to start within six months of a site being allocated. Ground rents were nominal and a number of sites were quickly taken up but the town failed to take root - probably because the need to live at inconvenient, if secure, sites had by this time disappeared.

Fig. 6:36 - Fort Chambray - the street plan.

COUNTRY VILLAS BUILT DURING THE PERIOD OF THE ORDER.

During their stay in Malta the Knights of St. John built a number of country villas and laid out several formal gardens. In the Mastership of Valette (1557-68) a small hunting lodge was built in what is now known as the Boschetto valley. Over the next two hundred years many Knights became attracted to this valley and gardens, woodland and game enclosures were built.

Naturally many members of the Order were hunters and falconers. The Boschetto was a good centre for this as it lay near a large area of the Island which had been depopulated by corsairs. It is hard to believe that the hunting was very good on an island of such limited size but there was plenty of small game and on Comino, in the sixteenth century, wild boar were occasionally captured.¹ Over large areas of Malta and Gozo game was preserved for the sole use of the Knights.

If the hunting was limited in scope Malta was an ideal centre for hawking. The archipelago is a staging point for bird migrants moving between Europe and Africa, so that however intensive the exploitation stocks were always plentiful for at least two seasons of the year. Besides this Malta had long been recognised as a centre of falcon breeding. The annual fee which the Order paid to the Spanish Crown for the Island was, in fact, one Maltese falcon.²

It was to take advantage of some of these opportunities that Grand Master Valette built a hunting lodge and stables at the Boschetto.³

1. 'Relazione dell'Isola di Malta 1582,' A.S.M, 1936, p.295.
2. W.Porter, The Knights of Malta, London, 1887, pp.469-478, Transcription of Charles Vth deed of gift of Malta.
3. Description of the Governor's Palaces in Malta, Malta, 1887, p.63.

Fig. 6:37 - The Boschetto Valley and Verdella Palace.



These simple facilities sufficed until the rule of Verdala¹ (1581-95) when the Maltese architect, Girolamo Cassar, was commissioned to build a fortified summer palace. Gardens were laid out around the villa and these were greatly enlarged in the time of Lascaris (1636-57). New enclosures, vineyards and fruit groves were made "with earth brought in from various spazi publici". Figs, olives, vines and "other fruitful trees" were planted besides a number which served purely for ornament.¹ The irrigation works were greatly extended and a number of fish ponds built.² Probably towards the end of the seventeenth century an animal park was added. The enclosure was stocked principally with deer and there were heavy penalties for trespassers.³

When de Paule (1623-36) succeeded to the Grand Mastership of the Order he was not enamoured with Verdalla Palace as a country residence. Apparently he was highly sociable and the prospect of living, for at least part of the year, seven miles and two hours carriage journey from the capital did not please him greatly. He already owned a small country house, near the more convenient village of Attard (M.R. 4972) and he decided to enlarge this to become the Palace of San Antonio. The new villa was surrounded by intricate formal gardens, large groves of citrus fruits were planted and fish imported from Sicily to stock the ponds.⁴

A number of other villas and gardens were also built. Grand Master Vilhena (1722-36) was responsible for the Dar il Lyuni (M.R. 529721), the

1. Treas. B. 289, ff.98-103.
2. Abela, op. cit. 1647, p.62.
3. R.M.L. 641, Feb. 25th, 1715.
4. Abela, op. cit. 1647, p.89.

Fig. 6:38 - Casa Leone and its Italian Garden -
Eighteenth Century.

Treas. B.310.

In Contrada Di S^a Veneranda.



Scala Di Canne Cinquanta.



Inquisitor had a summer palace (M.R. 4667) in the valley next to the one containing Verdalla, a fine mid-seventeenth century country house stood on the promontory to the northeast of Vittoriosa and many smaller villas and gardens were completed during the period.

THE DEVELOPMENT OF THE OUTER FORTS AND TOWERS.

Away from the fortification set pieces around the harbours the Order built a chain of coastal and peripheral towers and forts. The majority were used only as coastal look-out towers and signal stations, as they lacked any potent means of delaying a landing. A few were small fortresses with the capability to drive off powerful assaults.

There had been a number of medieval, coastal towers defending some of the better landing places. One such tower guarded Salina bay, there was probably another holding the mouths of Marsamxett and the Grand Harbour and it was proposed to build one on Comino. None of these towers survived the early years of the Order's rule. The Salina tower was abandoned, probably before the Knights arrived and if the Sceberras tower was still in existence, it was destroyed when Fort St. Elmo was built.

The first, outer, forts to be built by the Order were - one at Marsax-lokk¹ and a group of towers on the crest of the Great Fault. Torre Falca² held the Falca Gap (M.R. 4674) and at San Paul tat-targa, Torre el Kaptan was built during the reign of Valette (1557-68). There is also a Nadur Tower, above the Bingemma Gap, and this may well have been built at about the same time.

Not until the seventeenth century did the Order attempt to cover the coasts systematically with a chain of forts and look-out towers. During the Mastership of Alof de Wignacourt (1601-22) a number of coastal fortresses were built beside the better landing places. Fort St. Lucian,

1. Balbi de Corneggio, op. cit. 1961.

2. Ibid. p.50.

erected at Marsaxlokk, was an elaborate fortress well supplied with artillery and strong enough to repulse an attempted Turkish landing in July 1614.¹ The armada of sixty ships then moved round to St. Thomas Bay, disembarked and pillaged the land around Żeitun. After this, Wignacourt decided to build, at his own expense, a fortress to guard St. Thomas Bay.² The same Master built a tower on Comino in 1618,³ again at his own expense. Another fort was built, in 1622,⁴ at the entrance to ^{the} Grand Harbour on the site of Fort Ricasoli which was erected some fifty years later. The coastal fortress at St. Paul's Bay was built in 1610.

After this period of war scare Malta became more settled but during the sixteen-forties there were again intense, and well founded, fears of a Turkish attack. Grand Master Lascaris decided to make the coastal defences more complete by building a series of fortified, coastal look^{out} towers. This policy was continued by Lascaris's successor, de Redin, who, towards the end of March 1658,⁵ announced to the Council of the Order that he intended to build, at his own expense, "twelve or fourteen coastal towers". In May 1658⁶ a fort at Mellieħa (M.R. 4081), which was rather larger than the others built at this time, was completed and armed with two pieces of artillery. By 1659 thirteen towers had been built,⁷ at a cost of 6,428 scudi (a scudo was worth 1/8d.). In all, during the period

1. A.O.M. 105, f.71v.
2. Ibid. 72v.
3. A.O.M. 106, ff.124v - 125.
4. Quentin Hughes, op. cit. 1956, p.36.
5. A.O.M. 260, f.31v.
6. Ibid. f.37.
7. Ibid. f.63.

from Wignacourt to de Redin, twenty-four coastal towers and fortresses were built; today they are still a characteristic sight in the coastal landscapes of Malta.

Many villages in Malta and Gozo had strong points within them where the inhabitants could gather in the event of an attack. Few of these remain on Malta but in Gozo they are, relatively, common and many houses still display drop boxes.

During the great war scare of the sixteen-seventies, resultant upon the fall of Candia, siege preparations took the form of Cottonera Lines, around the Three Cities. About 1720 the Turks were again expected; "not a siege, but an incursion and devastation of the countryside",¹ and the coastal defences were carefully inspected. It was decided, in 1722, that these could be further strengthened by the building of redoubts and coastal batteries. Remnants of many of these redoubts remain today. After this time some quaint methods of coastal defence were developed. In 1723² a project for throwing large stones into the sea, at Gozo's more accessible bays, was started with the hope that, if ships tried to disembark troops there, the bottoms would be torn out of them.

During the seventeen forties the 'fogazza' was introduced. This was a pit cut into solid rock, normally sited near a landing place. The excavation was filled with powder, shot, ^{and} rubble; ~~etc.~~ when ignited it showered the coast, and presumably the attackers, with debris.

1. Recapitolazione della opere di fortifiⁿⁱ fatte nelle isole di Malta et Gozo dall'anno 1722 sino all'anno 1732, S.J.G.
2. Ibid. p.4.

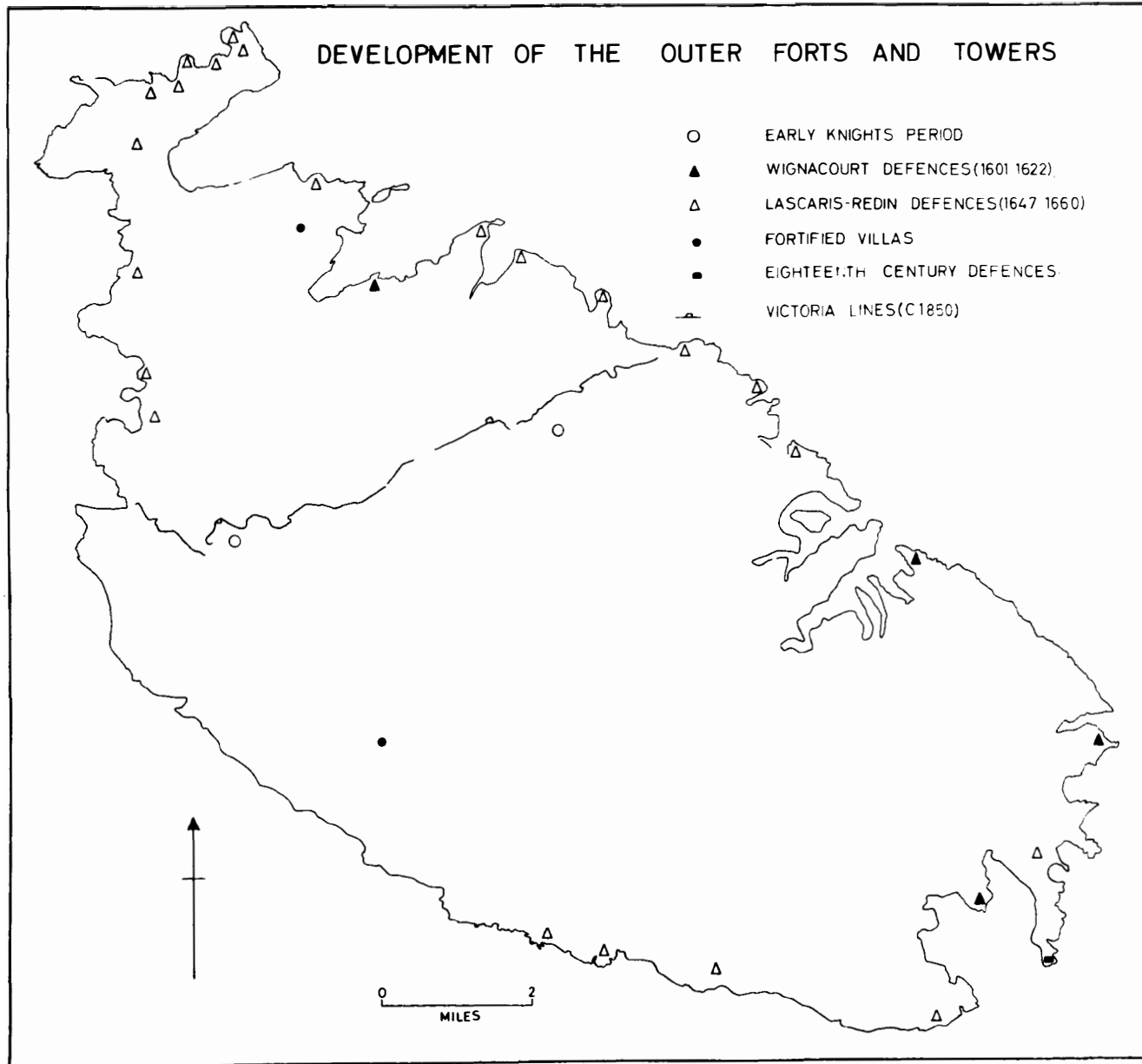
The defence of that part of the Island lying to north and west of the Great Fault had always been a problem - partly because of its accessibility from the sea, partly due to the indefensibility of the coast, where each bay outflanks the last and partly to the problems of communication within the area itself. The standard solution to these problems, in troubled times, has been to abandon the northern parts and concentrate the defences on the Great Fault. Along this natural defence are to be found relics of several sets of defensive works. There are the remains of a Roman tower, the lock[^]out towers built by the Order and Victoria lines built by the British in the middle of the last century. But prior to the British project there was another, discontinuous, line of defences erected c.1730. Over three hundred yards of redoubt were built ^{to} covering the Falca Gap and similar works ^{were created} near Naxos. ¹

1. Recapitolazione etc. op. cit.

⁶
Fig. 3:39 - Development of the Outer Ports and Towers.

DEVELOPMENT OF THE OUTER FORTS AND TOWERS

- EARLY KNIGHTS PERIOD
- ▲ WIGNACOURT DEFENCES (1601 1622)
- △ LASCARIS-REDIN DEFENCES (1647 1660)
- FORTIFIED VILLAS
- EIGHTEENTH CENTURY DEFENCES
- VICTORIA LINES (C1850)



CHAPTER VII

INDUSTRY, TRADE AND FINANCE

The Maltese islands are poor in natural resources. Apart from a plentiful supply of good building stone, there is no mineral wealth, no woodland and the water supply is limited.

The Structure of the Maltese Economy prior to 1530.

The picture which emerges of the Maltese economy in the late fifteenth century and early sixteenth century is fairly simple. The Island did not produce enough grain and imported a great deal from Sicily using currency gained, very largely, by the export of cotton and cumin. However, prior to the fifteenth century there is evidence to suggest a wider range of economic activities with a much greater emphasis on trade and piracy. In 1429 the corso had to be suspended, due to the loss of population it was causing, and as many boats were engaged in both trade and piracy there was a double loss. No doubt the shore based trades, associated with these activities, also suffered.

By 1430 the Island was economically depressed and remained so for the next century. As the seas around became increasingly infested with corsairs, trading contacts with the outside world became difficult and the town which had been the centre for external trade - Birgu - went into rapid decline.

Internally the economy was dominated by agriculture and the cotton industry but there were also a considerable number and variety of craftsmen - stoneworkers, carpenters, weavers, gold and silver smiths, sail and rope-makers, other trades allied to the fitting out of vessels, fishermen,

tailors, shoemakers, saddlers, millers,¹ and similar tradesmen.

Overall the economic outlook was bleak. The Island did not grow enough food and the essential trade links with Sicily were continually endangered by corsairs. Corsairs, too, were causing direct damage to the islands and in these conditions, a lack of security for investment, and a declining population, the economy of Malta was decaying.

The Arrival of the Order of St. John.

The coming of the Order altered this situation. The Religion contributed to the economic development of Malta in several ways. Firstly, it created a relative security and made the Island a safer place for investment. The Order secured, for instance, the base of the corso and piracy once again contributed to the economy. Secondly, the huge sums which the Order spent in Malta provided work, and frequently capital, for the Maltese so that the economy was lifted from its previous stagnation. Security and work induced population increases with the added possibilities for economic growth this brings. Thirdly, the Order set up industries which were essential to the running of its military machine. These in turn gave rise to subsidiary, supporting industries, so that the ramifications of the Order's activities around the harbours impinged upon the economy of the whole Island.

From the Order's viewpoint Malta had many disadvantages. These all sprang from the lack of local resources and the consequent liability to blockage. Food supplies were insufficient, there were no raw materials

1. A.Mifsud, 'I Nostri Consoli e le Arte ed i Mestieri', A.M., 1918, pp.40-41. R.Valentini, 'Organizzazione municipale e classi sociali in Malta alla fine del sec. XIV,' A.S.M., Anno VIII, Roma, 1937.

on which to base the essential industries of war, few existing industries, the local population was too small to raise an adequate defence force, at least in the early years, and provided too small a market to warrant local production of many goods. All these things - food, soldiers, raw materials and many manufactured products - had to be imported. Because of these shortcomings, in some ways, Malta never became completely the base of the Order. For instance, logistically the galleys were based partially upon Sicily where the Religion had a supply base to which the squadron usually went before starting a mission.

In view of the lack of resources any development of Malta required large imports and a deal of foreign currency. The Order had just these external sources of wealth which the Island needed. The Religion's European properties were investments which yearly yielded a percentage of their earnings to the central Treasury in Malta. It was, to a great extent, these sources of wealth which paid for the food imports, the new towns, fortifications and fleet of the Order. Malta, whilst basically poor, was drawing a form of subsidy from Europe in return for the use of the Island's position and harbours.

The problem of economic dependence, mentioned above, had other facets. Firstly, there were the diplomatic problems generated by partial dependence on Sicily and its Spanish overlords. Briefly the Order was predominantly French and their European rivals, Spain, controlled the supply lines. Difficult situations could, and did, arise. Secondly, there was the paradoxical position of the Order in Europe. During the eighteenth century the usefulness of a crusading organisation was increasingly

questioned and as the Order had property in most European countries it was dependent on each to a degree. Late in the eighteenth century the social structure of the Order, and all that it stood for, was denounced in France, leading to the sequestering of the Religion's lands and acute financial embarrassment. It is against this background of inter-linked social, economic and political problems that the economic policy of the Order must be viewed.

In the first decades of their rule the Knights were aloof and disinterested overlords but even the flower of Europe's nobility must have an economic basis. As the realities of the dependent situation impinged upon them they became increasingly involved in regulating the economic affairs of the Island, until there were few sectors of the Maltese economy over which no control was exercised.

Generally the tempo of trade and industry in the late Middle Ages and the early sixteenth century was low in Malta. The Island was very much on the outskirts of the western world, no great trade routes passed by and the surrounding areas were likewise afflicted with economic ills, largely brought on by corsair activity. In short the population and economy of Malta were, at best, stagnant and the whole region was insecure and given to violent disruptions. Malta was a bad place to invest money and the Island's economy was certainly not going to accumulate much capital by itself. Even after the arrival of the Order insecurity continued to afflict the area to the detriment of commerce. The economic life of Sicily was, in many sectors, arrested by the threat of a Turkish invasion in the mid-

sixteenth century.¹ And certainly the disruptions caused by large scale raids and population migrations in Malta, in the years prior to the Siege, were no incentive to economic expansion. As will become apparent the problems caused by Turkish threats and the activities of Barbary corsairs lasted right through the Order's rule. The Moslem threat was particularly important because of the Island's susceptibility to blockade and the necessity for it to trade. Paradoxically, it was the Moslem threat which brought the Order to Malta and, in many ways, provided the stimulus for economic expansion. When the threat ceased the Order collapsed.

1. 'Il Governo di Ferrante Gongaga in Sicilia,' Storia di Sicilia, Nuova serie, Anno XXXI, Palermo, 1906, p.13.

FINANCE.

There can be no disputing the great economic expansion which took place in the Maltese islands between 1530 and 1798. The basic reason for growth was the presence of the Order which provided the essential security for economic development and, by its own spending, gave a powerful stimulus to the whole economy. The Order was by far the largest and most important economic unit on the Island and it follows that the economic health of Malta was regulated, to a very large degree, by the financial structure of the Religion. As yet little has been published on the Order's finances and it is beyond the scope of this study to attempt a detailed examination of them. However, it is important to indicate certain trends.

In 1554 the income of the Order was some 63,000 scudi per annum.¹ Bosio² gives a similar figure for that year and states that annual expenditure was running at 111,000 scudi per annum. Defence spending was high at this time and there is no reason to doubt the deficit nor the ability of the Order to cover it from other sources.

A document compiled during the Mastership of La Cassière (1572-81)³ gives the Order's revenue as 124,000 scudi per annum with expenditure slightly less at 120,000 scudi per annum.

By 1583⁴ income was 151,734 'scudi d'oro' or 177,023 'scudi moneta'. The rise in income here is probably partially related to the Chapter General's decision, in 1583, to impose a general tax on the property of

1. A.O.M. 424, f.228.

2. Bosio, op. cit. 1602, p.349.

3. Quoted by E.W.Schermahorn, op. cit. 1929, p.153, F.N.

4. Catalago e stima delli Priorati, Baliaggi e Commende di tutta la Religione 1583, f.38, S.J.G.

the Order.¹ A breakdown of expenditure for the same year gives a clear indication of how the money was being spent. Nearly 5,000 scudi on St. John's Conventual Church, over 8,000 on the Palace, over 11,000 at the Hospital, 3,431 to charity, 40,200 on feeding the Order and 97,535 was spent on the galleys. In addition to this there were expenses incurred outside the convent; the maintenance of ambassadors and receivers. Clearly much of the Order's expenditure in Malta found its way to other lands. A large part of the money spent on food went to Sicily, although even this provided the Maltese shipping industry with trading opportunities. Similarly a great deal of the expenditure on the galleys was consumed abroad; by the supply base at Augusta, purchases of food, timber and ships from foreign yards. This drain of money from the Island was caused by Malta's basic lack of resources.

The Order's income continued to rise in the seventeenth and eighteenth centuries. In the Magistracy of de Paule (1623-36) the average yearly income was 269, 116 scudi per annum.² whilst expenditure averaged 267,132 scudi per annum.

At this time the major sources of income were as follows:-

Prizes taken by the galleys	12,000 scudi.
'Vacanti'	35,663 "
'Spogli'	33,262 "
'Passagi' and minorities	24,968 "
Commanderies	177,023 "
Ransom and sale of slaves	7,000 "

1. Del Pozzo, op. cit. 1715, p.237.

2. Vat. Barb. Lat. 5036. Quoted by E.W.Schermahorn, op. cit. 1929, p.152. F.N.

- del)
- 'Vacanti' - incomes from vacant commanderies.
 - 'Spogli' - on death most of a Knight's estate became the property of the Order. The proceeds from such estates were known as 'spogli'
 - (Passagi' - entrance fees paid by new members.

The major expenses were:-

St. John's Conventual Church	4,242	scudi.
Hospital	25,000	"
Palace	10,141	"
Tavola (footstuffs for members of the Order)	32,000	"
Slaves Prison	8,950	"
Charity	3,431	"
Galley Squadron	135,000	"

By 1780 income had reached 1,364,174 scudi per annum with expenditure running at a slightly lower level.¹

Major Sources of income - Responsions (Ten year averages)	475,207	scudi
Mortuaries and vacancies	214,722	"
'Spogli'	247,550	"
'Passagi'	203,345	"
Produce of forest trees	47,983	"
'Fondazione' incorporated in the Treasury	34,302	"
Redemption of slaves	16,617	"

The major items of expenditure were:-
(Ten year averages)

Ambassadors	38,026	"
Receivers	66,433	"
Conventual churches	11,597	"
Alms	17,309	"
Hospital	79,476	"

1. W.H.Thornton, Memoir on the Finances of the Order,
Malta, 1836.

Hospital for women	20,177	scudi
Public works	34,546	"
Slave Prisons	38,264	"
Allowances to the Grand Master and other members of the Order	56,011	"
Galleys and other vessels	467,876	"
Land forces and fortifications	173,039	"

Unfortunately accounts as detailed as those above were only presented infrequently.

The large sums spent on ambassadors in the latter part of the eighteenth century reflects the Order's growing ideas of sovereignty. The receivers were responsible for transferring responsions to Malta and for making payments for goods purchased by the Order outside the Island.

Receivers also functioned as branches of a bank, the head office of which was the Treasury in Malta. This function was important for it meant that Knights and merchants could pay funds into the Treasury in Malta and withdraw them, against a bill of exchange, from one of the receivers. The reverse process could also be operated.

The largest items of expenditure in the above list are associated with the Order's hospitals, galleys and land defences. The accounts show very little sign of the wasteful expenditure which is often attributed to the Order during the later years in Malta. What is more, in spite of the decline of the Religion, the financial position was healthy until the confiscation of the French estates, in 1792, which robbed the Order of one sixth of its income.

During the period 1530 to 1798 there was apparently a very large increase in the Order's income but there are some problems here. Firstly,

cup. it may be erroneous to compare figures, without further investigation, for it is possible that the Order altered its methods of accounting during the period. Secondly, it is impossible to say at present whether increases of income represent a real advance, in relation to the rest of Europe, or are simply a reflection of the secular rise in prices. In Malta the Order's investments, in real terms, had appreciated many times but a third of the Religion's income, in the late eighteenth century, still came in the form of responsions from the European estates. The commanderies do not appear to have been very dynamic but occasionally the Order was exceptionally fortunate. For instance lands of an estate near Paris were developed for building purposes as the city grew.

There has been a deal of discussion as to how much money the Order put into the Maltese economy annually. Ransijat, who was in charge of the Religion's finances towards the end of the eighteenth century, estimated the figure at £164,000 per annum. Thornton, after a more detailed analysis, suggested £185,000 per annum again for the late eighteenth century. The last figure is probably a fair estimate for normal, official expenditure of the Order, during the latter part of the eighteenth century. However, it neglects extraordinary spending by the Order and its members. Both these sources were of importance. Exceptional expenditure could be financed from the Order's huge assets against which large sums might be borrowed. Special demands could be laid upon the commanderies and as long as there was a real threat from the Turks special donations were squeezed from European powers, whilst Knights were never loath to support the Order financially. Sources of the above kind supported the many

years of budget deficit in the mid-sixteenth century. The building of Valletta could never have been begun on the Order's income but with donations from Europe, the mortgaging of property, gifts in kind, loans of labourers and the contributions of Knights the work was successfully undertaken. The building of Valletta probably refinanced the Maltese economy which had been wrecked by the siege of 1565. A great deal of the Order's later building was financed not out of income but by the donations of members. It is unnecessary to list the many impressive structures built with money provided by Knights but the works of Alof Wignacourt can be quoted as an outstanding example. Wignacourt was Grand Master from 1601 to 1622 during which time he spent handsomely on works for the Order - an aqueduct to give Valletta an adequate water supply cost 30,000 scudi, he had fountains erected in the streets of the capital, he built a number of coastal fortresses and had a 'gran galeone' built in Amsterdam. In all, together with the money he left on death, he contributed nearly half a million scudi to the Order. Above this all through the period of the Order's rule Knights were living at a high standard, in fine houses built from their own resources and staffed by Maltese servants. Lavish private spending of this type makes nonsense of attempts to estimate how much money the Order put into the Maltese economy. There is another point. By the end of the eighteenth century the spending of the Order probably did not look so vast, compared with the Island's total annual turnover. However, this was not the case in the sixteenth century when the Order primed and refinanced the whole economy of the Island. The increased turnover of 1790 was the result of these early years. Even at the end

Alof

of the eighteenth century the Order remained the largest single unit in the Island's economy and without the Religion's foreign investments Malta could not have balanced its overseas payments. Boisgelin¹ could conclude with truth that "Malta has become too populous to be supported by its commerce, unassisted by the riches of the Order."

1. op. cit. 1805, p.109.

INDUSTRY.

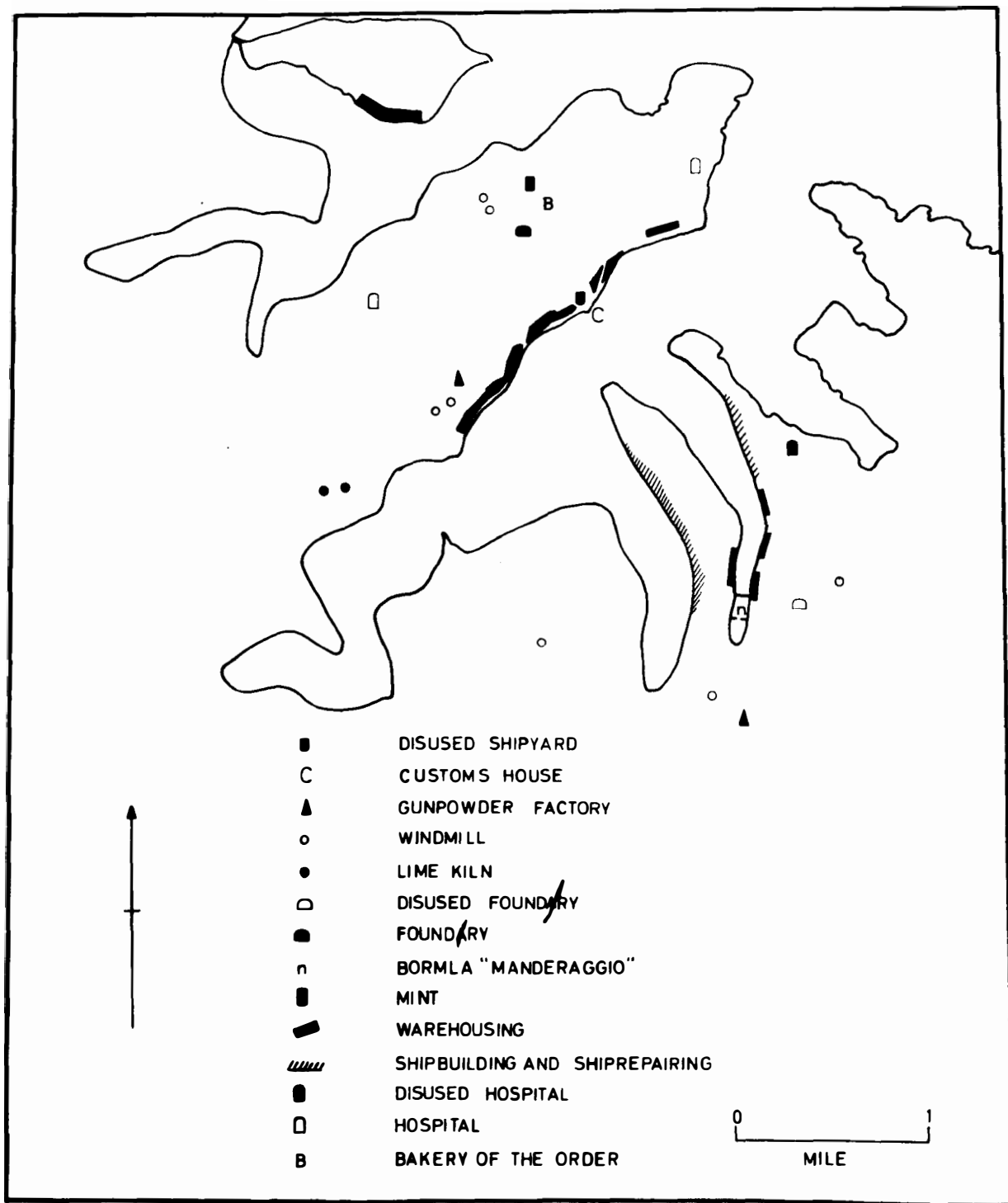
Shipbuilding.

The lack of industry on Malta was a great handicap to the Order's military machine and certain manufacturing processes were rapidly introduced after 1530. A bakery was erected in Birgu and several other service industries were encouraged. The greatest expansion took place in the industries linked with the two spheres of military operations in which the Order was principally interested - the galley squadron and the development of defence works around the Grand Harbour.

A shipbuilding or ship repairing industry had certainly existed in Malta prior to the period of the Order. There is some doubt as to whether there was a yard on the Island capable of building larger vessels but in any case, whether one existed or not, the shipbuilding facilities in 1530 were inadequate for the Order's needs. At this time the navy consisted of three galleys and a number of smaller ships. The squadron was quickly expanded and by 1562 it consisted of six galleys¹ together with a number of auxiliary vessels. Some galleys were built abroad and others were constructed in Malta. In 1545² we know an arsenal existed on Malta and there is a mention of a galley being completed on the Island in 1554,³ although others had probably been built prior to this date. In the early years much of the shipbuilding work seems to have been put out to European yards. Not only this but the repair facilities at Malta were such that vessels frequently had to be sent to Messina for routine maintenance. Repair

1. A.O.M. 429, f.26v.
2. Bosio, op. cit. 1602, p.242.
3. Ibid. p.352.
4. A.O.M. 429, 1563, f.222v.

Fig. 7:1 - Industrial development around the
harbours. Late Eighteenth Century.



facilities existed on the Island but seem to have been inadequate to handle all the work.

When Valletta was built it was determined to erect a large new ship yard close to St. Elmo and whilst this was building the Birgu yard continued to be used. About 1600 the Birgu yard was increased in size and some galley arches built.¹ Even with the combined production of the Valletta and Birgu yards the Order could not build all its own vessels during the seventeenth century. Work had still to be put out to the yards at ~~Mars~~^Silles, Naples, Genoa, Pisa, Messina, Toulon, Barcelona, Città Vecchia and occasionally Amsterdam. Normally the hull was built in a foreign arsenal and then towed to Malta for fitting out. The need to get so much work done abroad was due partly to lack of capacity and partly to a group of problems affecting shipbuilding in Malta. There frequently seem to have been difficulties in obtaining suitable supplies of wood. The Order had plenty of wood on its European estates but not only was transport expensive but timber was often regarded as a strategic commodity and permission to cut and export was not always obtained. The Order had good timber in Sicily² but there was frequently difficulty in getting this out.³

As in several other sectors of the armaments industry, the Order does not appear to have been able to afford to maintain ordnance establishments

1. A.O.M. 1184, f. 231.

2. Deliberaznia della Camera del Tesaro, 1759, p.12.

3. A.O.M. 584, 2nd. May 1780.

which, not only supplied everyday needs, but also had enough spare capacity to produce the additional war materials needed during a crisis. This, of course, could be embarrassing and on occasions, when European powers were committed to their own wars, armaments were unobtainable.

The Malta shipyards were unable, during a large part of the Order's rule, both to repair and replace the squadron at a satisfactory rate. Besides this the Birgu yard was apparently unable to build the Order's largest type of galley - 'una capitana' - until the end of the seventeenth century. The increase in the size of the arsenals after 1565 did, however, make it unnecessary for ships to be sent off to Messina for repair work.

The number of galleys in service varied. From three in 1530 it rose to six in 1561 but in 1590 the number was down to four.¹ Throughout the seventeenth and eighteenth centuries fluctuations were caused by the prospects of peace and war and the Order's financial position. In 1674 there were seven galleys,² in 1686 eight,³ although this was later reduced to seven, in 1692, due to the expense involved.⁴ During the latter part of the seventeenth century⁵ a galley was regarded as having a life of seven years. A new vessel cost, on average, 7,413 scudi allowing for the sale of the one taken out of service. Most of the money for new vessels came from the seven galley foundations.

1. A.O.M. 6385, ff.128-131v.

2. A.O.M. 262, f.36v.

3. B.M. 19306, ADD, f.55.

4. A.O.M. 263, f.134.

5. Trattato sopra il buon regimento delle Galere di questa Sacra Religione, S.J.G.

In 1691¹ the Birgu arsenal, which was largely wooden, was in a bad state and had to be extensively repaired. The repair works were only palliative and in 1695 the roof again threatened collapse.² In the following year extensive sums were spent on rebuilding and enlargement.³ A group of houses was bought up behind the existing arsenal and it was extended inland. The depth of water offshore was too great to allow seaward extension. The increase in size allowed the largest vessels to be constructed. At this time the arsenal consisted of three galley arches (figure 6:27).

At the beginning of the eighteenth century, during the rule of Grand Master Perellos (1697-1720), the Order revised its naval policy. Instead of the striking force consisting only of galleys (oar propelled vessels) with auxiliary sails) three round bottomed sailing vessels were introduced. The number of galleys was reduced - in 1704⁴ there were five and by 1713 only four.⁵ At the middle of the century the navy consisted of four sailing vessels, four galleys and three frigates. From this time the size of the navy declined. By 1765⁶ there was not enough work to keep the arsenal fully employed and it was closed during periods of inactivity. But in 1798, after years of decline, the fleet of the Order still consisted of four galleys, one sailing vessel, three frigates and a number of smaller ships.

The building and maintaining of vessels were not the only contribution the Order's navy made to the economy of Malta. A large number of

1. A.O.M. 263, f.106.
2. A.O.M. 263, f.196.
3. A.O.M. 264, ff.114v - 115v.
4. A.O.M. 265, f.94.
5. A.O.M. 266, f.92.
6. Deliberazznia della Camera del Tesaro, p.135.

Maltese found employment as soldiers and sailors on the vessels in service. The opportunities for employment were restricted by the use of slaves, although only in the most menial tasks - principally as rowers - but even slaves need feeding, clothing, housing and guarding, all of which offered further employment to free men.

Besides the state controlled sector of the shipbuilding industry there was also a very important private sector. In the seventeenth and eighteenth centuries, with the increasing importance of trade and the corso, a strong demand for vessels developed from independent traders and corsairs. The privately owned shipbuilding industry must have been established very early in the Order's rule, if it did not already exist, and it probably occupied the inner recesses of the Galley Creek near Bormla. Documentary references to this section of the industry are few, particularly in the early years. In 1661¹ there is a reference to privately built brigantines and in 1681² another to boats for the corso being built by individuals.

By the beginning of the eighteenth century all sectors of the shipbuilding industry had expanded so much, that the old locations around Galley Creek were inadequate, and virtually the whole of the Senglea shore of French Creek was given over to shipbuilding, both by the Order and privately. Whether or not the Order's yards built boats for private individuals when possible is unknown.

The Order's shipbuilding facilities were maintained until the end of its rule in Malta and Captain Ball could describe the Island, in the

1. R.M.L. 641.

2. R.M.L. 1216, f.91.

first years of the nineteenth century, as possessing "a small but complete shipyard". The existence of this yard has been extremely important for it gave the Royal Navy an initial repair base in Malta. Gradually these facilities were extended until, in the mid-twentieth century, over 12,000 people were employed in the yard. The distribution of the present ship repairing industry has been largely determined by the pattern of the industry which emerged under the Order.

BUILDING AND QUARRYING.

The extension of the urban areas and the fortifications have already been described in detail (chapter V) and obviously such developments were a powerful stimulant to the building industry. The general increase in population also led to a greater demand for houses in the Heartland casals. During the period the building and quarrying industries did suffer occasional recessions, the number employed on the fortifications tended to fluctuate with the likelihood of a Turkish attack on the Island, but the overall picture is one of expansion.

The quarrying industry remained largely in private ownership and was split into numerous small production units. The most widely employed building material was a freestone, known as 'franka', extracted from the middle Globigerina. There are few direct references but field evidence suggests that 'franka' was quarried principally around Luqa and Naxxar.

l.c. The demand for harder stone, Coralline Limestone or 'zonqor',¹ was much less. Early in the Order's rule it was used for little more than the production of mill-stones² and Abela refers to a quarry at "El Zoncol" about one mile east of Vittoriosa. 'Zonqor' was also used as a domestic building stone in Upper Coralline areas where the rock was usually available, ready quarried, at the edge of the escarpments. In the seventeenth century 'zonqor' came to be more widely used, after it was discovered to offer greater resistance to sea spray than 'franka'; a particularly valuable

1. Today the name 'zonqor' refers only to the Lower Coralline, in the eighteenth century it appears to have had a wider usage.
2. Abela, op. cit. 1647, p.133.

characteristic as so many of Malta's fortifications stood close to the sea. There is some doubt as to when the rock started to be used for fortification work. Clantar¹ states that 'zonqor' was first used for the purpose during the rule of Grand Master Perellos (1697-1720) but there is a reference to work being done on the fortifications, with "pietra di zoncor", in 1689.² After this time a number of hardstone quarries were opened up on the Zonqor Ridge, which runs between Fort Ricasoli (M.R. 5772) and Marsacala.³

The building industry had well developed public and private sectors. The Order designed and erected most of the more important works, particularly where they were of strategic value, but there were many stone cutters and masons in private employ. The Church, too, erected a large number of important buildings during the period.

Vast numbers of workmen were frequently employed on the fortifications - at one stage 8,000 men worked on the Valletta fortifications. The effects of this state spending were lessened firstly, by the use of slaves and secondly, by pressing the Maltese into working without payment for short periods. This happened during the building of Valletta, in 1644⁴ and in 1670,⁵ whilst sometimes all slaves in private employ were ordered onto the works.⁶ Although action of this type lessened employment opportunities

1. op. cit. 1772, p.408.

2. A.O.M. 263, f.62v.

3. e.g. A quarry was opened by the Order at Innvader. Narrativa delle opere di Fortificazione etc..... 1732 1762, S.J.G.

4. A.O.M. 257, f.197.

5. A.O.M. 261, f.167.

6. e.g. 1645, A.O.M. 258, f.3v.

the economy still received stimulation as large numbers of craftsmen had to be employed on a permanent basis. Even when a fortification project had been completed stone-cutters and stone-masons were required to service the structures. Close to the sea maintenance costs were high due to the corrosive power of the salt laden air. For instance only a few years after they were completed the batteries and redoubts on the north coast of Gozo were so corroded that much of the stonework had to be renewed.¹

The amount of capital put into the fortifications was great. 70,000 l.c. scudi were put up initially to finance Margharita Lines, whilst even in 1670, thirty years after they started, 8,000 scudi per month were being l.c. spent on Floriana Lines.² Not all this money was found by the Treasury. Some came from gifts by members of the Order and occasionally special taxes were resorted to as in 1574,³ 1644 and 1673, when 100,000 scudi were raised l.c. for Cottonera Lines.⁴ Normally the Maltese were untaxed.

The Order occasionally created work on the fortifications to relieve unemployment. For instance on Gozo in 1742, after two bad harvests, work on a project at Marsalforn was completed. This resulted in hardship and the Order started repair work on other fortifications to lessen unemployment.⁵

Not only did the building industry undergo considerable expansion

1. Narrativa della opere di fortificazione fatte da gineo 1732 a marzo 1762, S.J.G.
2. A.O.M. 261, f.160.
3. Del Pozzo, op. cit. 1715, p.77.
4. R.M.L. 641, October 1673.
5. Narrativa etc. 1732-1762, S.J.G.

during the rule of the Order but its range of materials and techniques were also enlarged. Prior to 1530 Maltese architecture was traditional, with styles and techniques being determined largely by the characteristics of the Globigerina limestone. There was a little stylistic influence from Sicily. During the rule of the Order Renaissance, Mannerist and Baroque styles were introduced and the whole range of possibilities for the building industry was enlarged.

Again in 1530 local quarries produced little but 'franka' however, by 1772 ^{was} ~~is~~ ciantar able to give an impressive list of different types of locally extracted stone and it is clear that, during the Order's rule, there had been a growing sophistication in the use and exploitation of local rocks.

A small part of the Island's stone production was exported. A 'bando' of 1702¹ states that it is forbidden to load any boat with 'balate', (stone blocks) 'ciangature' (paving stones) or any other type of stone without a licence. Ciantar² refers rather grandiously to the export of Maltese stone to many parts of Europe, Africa and Asia. Boisgelin³ mentions the export of small quantities of stone to Sicily and the Levant, particularly Smyrna. Whilst Captain Ball refers to exports to Sicily, the Adriatic and Barbary.⁴

Marble and other similar stones were imported for sculpting and decorating the larger buildings.

1. R.M.L. 429, pp.256-7.
2. op. cit. 1772, p.407.
3. op. cit. 1805, p.110.
4. C.O. 158.1, f.21v. (1801,
P.R. 5,

TEXTILES.

Cotton.

Textiles were manufactured in Neolithic Malta and there is evidence of their production in the Bronze Age and ^{during the} Roman occupation. It is hard to believe that cotton, at least, was not important during the Arab domination and in the late Middle Ages cotton production was one of the Island's few important industries. Mifsud¹ has suggested that exports of cotton, in the fifteenth century, were the major source of currency for the purchase of grain. At this time the commercial centre of the industry seems to have been Mdina and there were regulations forbidding the sale of wool and cotton yarns outside the city.²

In 1545, on the Birgu marina, close to the arsenal, a building was erected to house the Order's bakeries. Only the ground floor was used for this purpose and above the manufacture of cotton sails for the galleys was started, using slave labour.³ Unfortunately there is a general lack of source material relating to the textiles industry in the sixteenth and seventeenth centuries. This is not surprising as it was overwhelmingly privately controlled and consisted of a large number of small producers and middlemen. Not until the eighteenth century, when the industry had grown so important that it could vitally affect the Island's interests, did the Order begin to regulate the activity and thus provide us with documentary sources. However it is clear, from the few references that do exist, that cotton in particular occupied an important place in the

1. A.Mifsud, 'L'approvvigionamento e l'Universita di Malta nelle passate Dominazioni,' A.M, vol. 5, 1918, p.191.
2. E.R.Leopardi, op. cit. M.H, 1959, p.257.
3. Bosio, op. cit. 1602, p.242.

economy of seventeenth century Malta. Abela describes both Żurrieq¹ and Żebbuġ² as important textile centres. The former ^{was} ~~is~~ particularly well known for its manufactures whilst the latter was a centre for the middleman who organised the industry.

Broadly, the industry was organised on the following lines. Cotton was grown by small farmers and then spun by their wives and offspring.³ A middleman then bought the spun cotton from the family and exported it, probably through other agents, or placed it with a different family which specialised in weaving. There was also some production of garments.

In the country districts the processing of the cotton meant the difference between poverty and a reasonable standard of life.⁴ The cotton industry depended to a very large extent on exports and when these broke down, as they did when the ports were closed, then the countryside was very quickly reduced to poverty. This happened in 1743⁵ when disease at Messina and in Reggio interrupted commerce and those "who lived by working cotton and other merchandise were reduced to extreme poverty". A variation of this situation developed, during the plague of 1676, when not only were exports halted but restrictions were placed on movement within the Island and the middleman, who financed and organised the cottage industry, were unable to move around.

Not only did a large number of people in the lower orders of society depend heavily on cotton but the merchant classes became increasingly involved in the activity. During the eighteenth century cotton became

1. Abela, op. cit. 1647, p.102.

2. Ibid. p.58.

3. R.M.L. 241, c.1740, f.323.

4. Ibid. 336v.

5. A.O.M. 269, f.264.

the Island's major industry and the foreign currency it earned, together with the number of persons involved, made the industry's welfare something of national importance. Eighteenth century 'bandi' give a picture of an industry which was not only increasingly protected but also regulated so that Maltese cotton should acquire a name for quality. In 1733¹ attempts were made to control the quality of 'cotton filato' after a complaint from Marseilles aroused fears that local cotton might be discredited. It is clear from the 'bando' that regulations already existed but that it was too easy to circumvent^{ent} them. More stringent controls were introduced. In 1735² regulations were promulgated on the way in which cotton was to be bound up for export. In August 1747³ a comprehensive 'bando' was issued detailing the state of quality control as it then existed. Before export cotton had to be inspected by an official of the Order, it had to be packed in a standard bale, bales had to be made up of cotton of the same quality, wet or spoiled goods were confiscated, the quantity and the quality of all cotton had to be declared and there were severe penalties for deception or error. These standards were enforced in official warehouses through which all exported cotton passed. It was only by such control that the problems of so many small producers producing different quantities and qualities could be overcome.

On the other hand the industry was very carefully protected. Local growers were shielded by regulations controlling the import of cotton.

1. R.M.L. 429, f.256.
2. R.M.L. 429, f.284.
3. R.M.L. 429, f.51.

In 1757¹ the import of cotton from "S.Giovanni d'Acrì" was forbidden and in 1769² the Grand Master declared that "to sustain and encourage the cultivation and commerce in cotton in these islands His Eminence has prohibited, under penalty of confiscation the import of cotton from the Levant". Sicilian cotton was not excluded and could be imported provided it was registered and clearly marked as Sicilian cotton manufactured in Malta.³ In some years all cotton imports were forbidden⁴ but this created problems as local growers did not always produce enough to supply other sectors of the industry. Shortages led to buying up and speculation⁵ and the Order was forced to regulate prices.⁶ Efforts were also made to ascertain production each year⁷ so that imports could be allowed at times of shortage. The export of raw cotton was prohibited.⁸

It is difficult in the absence of adequate figures to discern when and how quickly cotton production was expanding. It would seem a fair assumption that the large amount of legislation relating to cotton, in the eighteenth century, indicates an industry which was considerably more important than it had been in the seventeenth century. Cavaliero, using the few surviving customs records, has shown that the industry was expanding in the seventeen-nineties. Whether this expansion was real or simply a recovery is impossible to say. In 1776, 466 tons of cotton thread were exported, in 1779 the figure was 825 tons and in the eight months before Napoleon's arrival 658 tons. The French market was closed by 1798.

1. R.M.L. 429, f.7.

2. Ibid.

3. R.M.L. 429, 1777, f.222.

4. Ibid. 1796, f.73.

5. Ibid. 1797, f.104.

6. Ibid. 1797, f.79.

7. Ibid. 1772, f.213.

8. R.Cavaliero, op. cit. 1960, p.86.

In addition to spun cotton some cloth and articles of clothing were exported.

Boisgelin summed up the situation at the end of the eighteenth century as follows "The principal trade of the Island consisted in cotton exported either as cloth or in its spun state the greatest part was sent into Spain for the manufacturers in Catalonia."

Ball estimated the value of cotton exports at half a million pounds annually. Oranges were second in importance and realised £2,000 a year.¹

Maltese cotton enjoyed a large home market as the majority of the population were clothed in local cloth. Ball thought the quality too coarse for any foreign market but the Barbary coast. In 1801 the export of raw cotton was still prohibited as spinning remained the chief industry of the poor.²

Cotton production declined rapidly early in the nineteenth century as a result of competition from America and Egypt together with the closing of the Spanish market. The declaring of Valletta a free port in 1801 helped to introduce competition. The industry survived for a time to supply local needs and to make occasional exports, particularly to Barbary. Charlton,³ has made an analysis of the 1851 census of the Islands in which year, after half a century of decline, over 10,000 persons were still employed on cotton manufacture in Malta alone. Charlton's study of the industry in the mid-nineteenth century is clearly relevant to its organisation under the Order.⁴

1. P.R.O, C.O. 158.1, 1801, f.17.

2. Ibid. f.20.

3. op. cit. 1960, p.31.

4. Ibid. pp.185-188.

In 1850 nearly all the operatives in the industry worked individually at home and there "tended to be family specialisation in spinning or weaving". There was also a marked regional specialisation of processes with weaving concentrated on Rabat, Żebbuġ, Siggiewi, Għargħur and to some extent Mosta. Spinning was particularly important in the Three Cities, Żabbar, Żeitun and Żurrieq. Żebbuġ, as it had been in the mid-seventeenth century, was still the largest centre for cotton merchants.

Towards the end of the eighteenth century a new twisting machine was introduced into the Island.¹ What influence the new process had or how far it penetrated the industry is difficult to say.

Other Textile Industries.

Apart from cotton several other textiles were produced and there were a number of ancillary trades. Certain dyes were made locally² and there must have been a large number of craftsmen involved in the manufacture and maintenance of spinning and weaving machinery.

The production of woollen yarns had been practised on the Island at least since the Middle Ages and it continued under the Order. Abela mentions the production of cloaks, rugs and other woollen goods at Żurrieq.³ The Maltese woollen industry never approached the size of the cotton industry probably because the latter enjoyed superior locational advantages. In fact, up to 1696, there was not a good supply of local woollen cloth and the galley crews were clothed with material imported from Sicily. The 1693 earthquake destroyed the plant of the Sicilian manufacturers and

1. Deliberaznia della Camera del Tesaro, 1759-1797, f.335.
2. Abela, op. cit. 1647, p.132.
3. Ibid. f.102.

in 1696¹ two men approached the Order and suggested that they started the production of 'arbaggi' in Malta. The scheme was approved² and a site allocated near Calcara (M.R.5772). Whether or not the enterprise was successful is unknown but 'arbaggio' was still being produced in Malta in the late eighteenth century³ and the Order was using the local product to clothe crews. Like cotton the production of woollen goods was subject to regulation regarding quality.

Hemp and linen were also produced locally (chapter IV).

There was a fairly large scale attempt to introduce the manufacture of silk into the Island in the eighteenth century. Abela⁴ recorded that little silk was made in Malta in the mid-seventeenth century. Early in the eighteenth century a number of mulberry trees were planted in the Floriana area and in the rule of Pinto (1741-73) a scheme was suggested for the widespread introduction of silk production.⁵ In 1772 Ciantar⁶ was able to report that mulberries had been planted in various places, principally Marsa, Floriana and San Antonio. Although Ciantar claims that the silk produced was equal^{in quality} to that made in Sicily he does mention some difficulties. These were apparently sufficient to kill the industry for there is no mention of it in documents relating to the early nineteenth century. The British administrators did attempt to introduce mulberries and grubs themselves, apparently they were unaware of the earlier failure, but this effort, too, was unsuccessful.

1. A.O.M. 264, f.103.

2. Ibid. f.104.

3. Deliberaznia della Camera del Tesaro, 1759-1797.

4. op. cit. 1647, p.132.

5. R.M.L. 2.

6. op. cit. 1772, p.386.

Salt Making.

The manufacture of salt had been a royal monopoly within the Sicilian Kingdom since Norman times. The monopoly was inherited by the Order when they were granted Malta in fief. The Knights were able to forbid the manufacture of salt in Malta without a licence from them and this right was enforced.¹

It is almost certain that salt making was practised in medieval Malta for there are numerous references to a "saline vecchie" behind Mellieħa Bay² but no record of it having operated during the sixteenth century. The name Mellieħa means salt pans.³

Quite when the new saline, as it was called, was built at Salina Bay is difficult to say but it was in existence by the middle of the sixteenth century.⁴ Early in the seventeenth century the Salina Bay works were enlarged,⁵ and in 1650 they were enlarged again.⁶ The pans fell into disuse at the end of the Order's rule, probably due to the disruption caused in expelling the French, but were repaired by the British administration and proved very profitable in the early nineteenth century.⁷

Besides the relatively large Salina works a number of smaller pans existed at Fort Tigne (M.R.5673), St. Elmo (M.R.5673), St. Julians (M.R.5475) and probably at Qala San Marku (M.R.5078).⁸

On Gozo a large group of salines existed at Marsalforn where development began in 1740.⁹

1. R.M.L. 641, 1698, f.239.

2. e.g. Treas.B.289, f.95. Abela, op. cit. 1647, p.74.

3. J.Aquilina, op. cit. 1961, p.216.

4. Balbi, op. cit. 1961, p.62.

5. A.O.M. 6395.

6. A.O.M. 258, f.238.

7. P.R.O, C.O, 158. 19, Appendix G.P.37.

8. P.R.O, C.O, 163,35, Appendix.

9. Gatt, op. cit. 1937, p.48.

Fig. 7:2 - The Salina Bay salt works from the air.



Fig. 7:3 - The Salina Bay salt works as shown in an
undated (probably Eighteenth Century) plan.

Source: Treas. B.290.

The Order, whilst retaining a monopoly over salt making on the Island, leased parts of the salines which they owned and granted concessions for the development of new works.

Part of the production of the Salina Bay pans was exported¹ and there is a reference to an export of salt to Venice in 1754.² But clearly the number of persons employed in salt making was small and the occupation was, in any case, seasonal for the evaporation pans could only operate during the hot, rainless months of summer.

Milling.

The Order appear to have enjoyed a monopoly right to erect windmills. Occasionally a windmill belonging to the Order was sold³ or a citizen given the right to erect a mill⁴ but, by and large, the Order owned most of the Island's windmills.

A list compiled in 1816 showed that there were twenty-six government owned windmills on Malta in working condition and leased.⁵ Very few of these mills existed when the Knights came to Malta and during their reign the 'molino a vento' became one of the most characteristic sights of Malta's landscape. There are references to windmills existing in the sixteenth century but they are few.

There is little information relating to windmills, although a number must have been built between 1570 and 1670, until the latter part of the

1. Abela, op. cit. 1647, p.71.

2. A.O.M. 272, f.101.

3. Treas.B.300, f.403.

4. A.O.M. 109, f.27v.

5. P.R.O, C.O, 163. 35.

seventeenth century. In 1674¹ the 'fondazione Cotoner' started work on windmills at Bormla, Żebbuġ, Floriana (2), Naxxar and Żurrieq. All were completed by 1676. At a later date the same foundation built windmills in Lia, Żeitun, Gudja and a second one at Żebbuġ.

In 1724 the 'fondazione Manoel'² built windmills at Rabat, Għargħur, Żurrieq, Birkirkara and one between Għaxaq and Żeitun. During the next couple of years another mill was completed on Malta and three on Gozo. The mills belonging to the foundation were normally given out on short leases (usually four years).³

Windmills were usually sited slightly away from the village they served, on open ground, to make the most efficient use of the wind.

Not all milling on the Island was done by windmills. In the sixteenth century a non-aeolian system was demonstrated, using donkeys for motive power. This system, or a similar one, was used in the Order's Valletta bakeries and in the auberges. How widely it was employed by private enterprise is unknown.

del u Figure 7:4 shows the distribution of windmills early in the nineteenth century. In broad outline, as would be expected, the distribution reflects the distribution of villages. A large casal was normally served by two or three mills and in this context it is surprising that Qormi, both in terms of size and its importance to the baking industry, had apparently only one windmill. Possibly donkey driven mills were being used here?

Figure 7:4 was constructed by plotting all documentary references to windmills. In addition, using a six inch map and aerial photographs

1. Treas. B. 300, f.2.
2. Treas. B. 310.
3. Treas. A. 23.

Fig. 7:4 - The Distribution of Windmills c.1800.

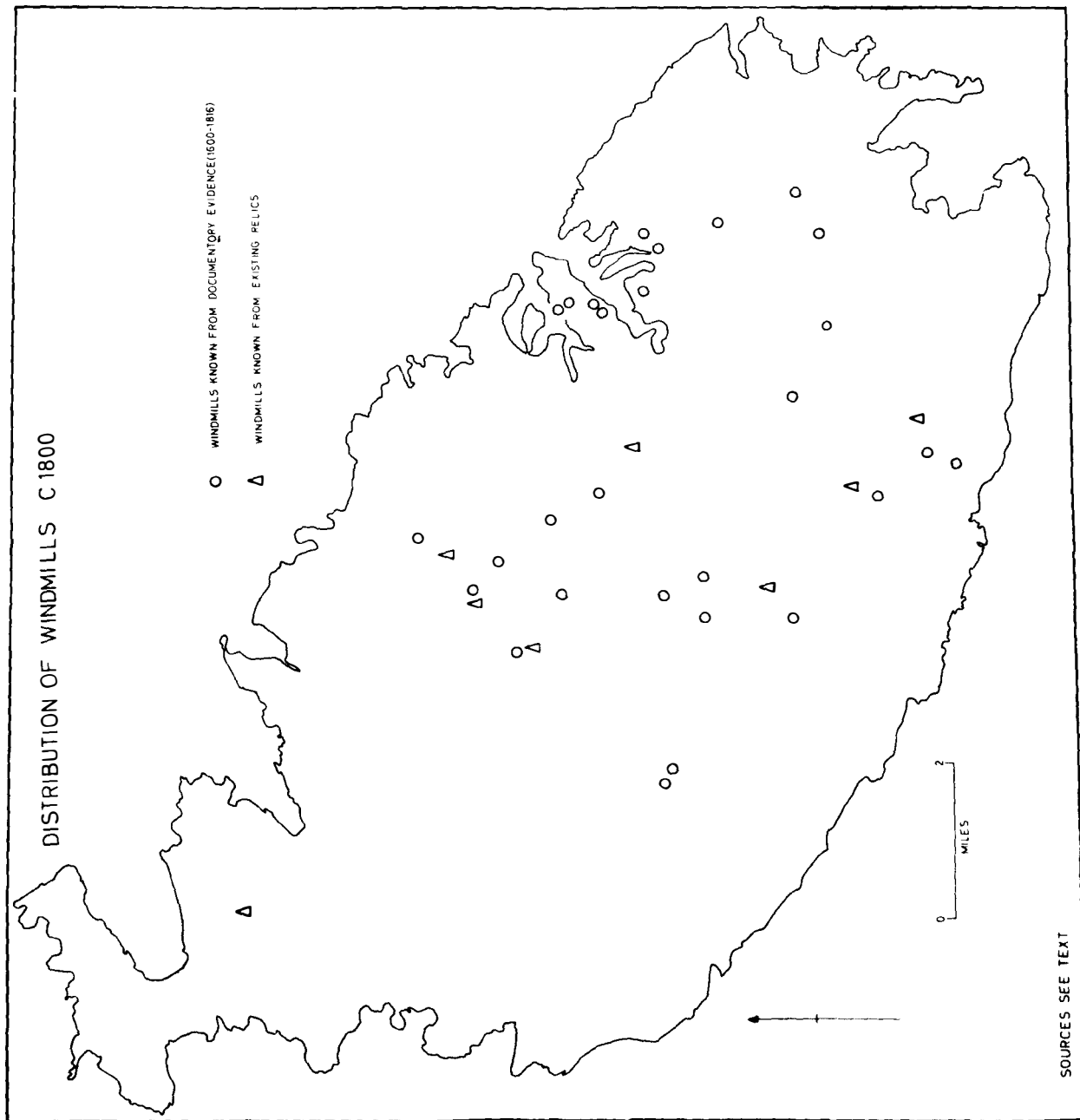
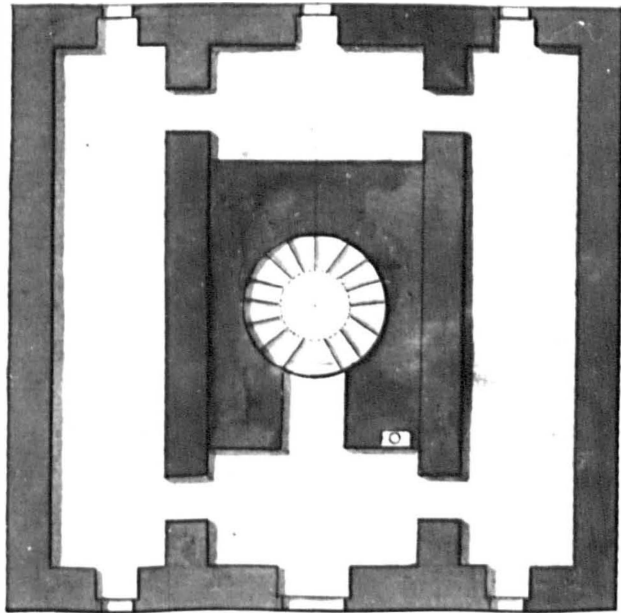
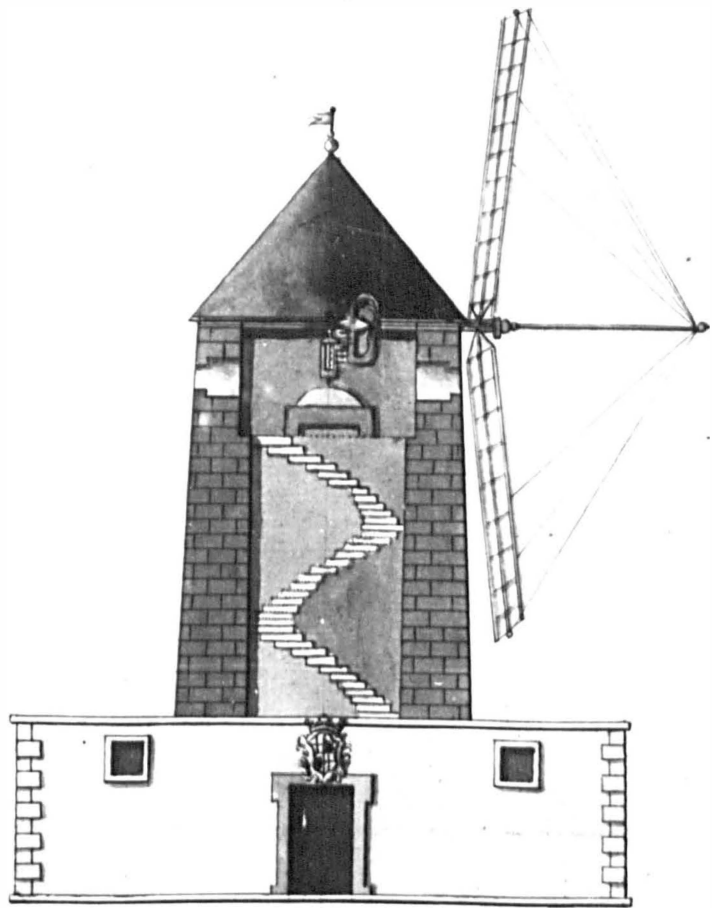


Fig. 7:5 - Plan and drawing of a windmill belonging
to the 'fondazione Cotzoner.'

del/t

Source: Treas. B.300.



1 2 3 4 5 6 7 Canne,

(windmills have a distinctive shape from the air) all relics of windmills, not mentioned in documentary sources, were plotted. The only mill in the north-west - at Mellietta - was probably built around the middle of the nineteenth century to serve the new village.

Miscellaneous trades and industries.

There were many other small industries, usually dominated by one man establishments. The Island possessed numerous goldsmiths, silversmiths, bakers, tailors, bootmakers, carpenters, smiths and similar craftsmen. Such people leave few records and, unless the administration requires the registration of businesses, their enterprise is unrecorded. Many tradesmen were obliged to seek a licence, either from the Order or the Università but usually the permit was issued and no record kept or the records themselves have disappeared.

References to small traders suggest that each casal had its del | a 'fornaco' (baker), 'ferraro' (smith) and miller whilst in Valletta were found the more specialised craftsmen - gold and silversmiths and a large number of tailors. For a time too, all smiths were brought into the fortified towns.¹ Presumably because a smithy is of strategic value. This 'bando' was never repeated and probably it was allowed to lapse as it must have caused extreme inconvenience. Many of the smaller industries enjoyed protection in various forms and were subject to regulation regarding standards.

Besides the craftsmen there were also a large number of traders in-

1. A.O.M. 1185, f.172.

volved in the economy as middlemen and in more dubious capacities. We have already mentioned the organisers of the cotton industry and there were similar men forming a marketing organisation which served, and probably financed a large part of, the Island's agriculture. The marketing regulations, enforced by the Università of Mdina, encouraged the existence of these agents as it was forbidden for a farmer to sell directly from his farm to the public.¹ Most produce had to pass through Mdina and in this way the authorities ensured the existence of a free market. Licences were also required to deal in other fields.

The markets of Valletta were full of traders and also of a group known as 'rivenditori'. Licences were never given for this activity which was apparently regarded as parasitic. Although such traders were frequently swept from the principal market - the 'Piazza dell'herba' - the problem was never entirely overcome.

Fishing.

There is conflicting evidence as to the importance of the fishing industry during the period. Abela² refers to the "fertility" of the seas around Malta and states that a great deal of fish was caught. Each year the Università³ issued regulations governing the price of a large number of species of fish. Against this the British administrators, early in the nineteenth century, stated that fish was a food only of the poorer classes. There is no nineteenth century evidence to suggest that the industry was large and no reason to think it had declined since the days.

1. Università 23, 1690, f.5v.

2. op. cit. 1647, p.135.

3. e.g. Università 22.

of the Order. There was also a lack of fishing villages. Only Zurrieq could be classed as such and although there were certainly many small boats based on the Grand Harbour the numbers employed in the industry must have been small. A few fish were reared in ponds.

The littoral was extensively exploited for shell fish.¹

In 1564 a ten year concession was given, by the Order, to allow the establishment of a tunny pickling plant.² The enterprise seems to have been successful and tunny fishing was still practised off Marfa Ridge in the mid-seventeenth century.³ However this form of fishing became extinct early in the eighteenth century.⁴

1. Abela, op. cit. 1647, p.135.
2. A.O.M. 430, f.246v.
3. Abela, op. cit. 1647, p.136.
4. Ciantar, op. cit. 1772, p.403.

external Trade.

In 1530 the external trade of Malta was inconsiderable consisting of exports of cotton and cumin and the import of foodstuffs. The arrival of the Order immediately caused some increase in trade, for it was a relatively large organisation, going through an intense phase of capital investment as Malta was developed to meet the military requirements of the time. A great deal of material was imported from Europe. As the demand for foodstuffs rose so imports from Sicily and southern Italy increased. Nor was it long before exports started to grow. In 1543¹ a batch of slaves was exported to Sicily and there are references to safe conducts being given to Moslems allowing them to return home to collect their ransoms.² Trade contacts with the North African coasts were developed or renewed. In 1559 safe conducts were issued for four Jews of Jerba who wished to come to Malta for trading purposes. Another resident of that island, "Mahamet de Razit benhaly", obtained a safe conduct for the same reason. But these early contacts and exports are insignificant against the great volume of imports. A wide variety of goods were shipped into the Island, often they were of a very simple nature which indicates how lacking in productive capacity the local economy was. For instance it seems to have been necessary to import nails and macaroni. The greatest part of the imports appear to have come via Licata, on the southern coast of Sicily.

There are several obvious disadvantages to Malta as a trading centre.

1. A.O.M. 417, f.194v.
2. e.g. A.O.M. 428, 1559, f.257v.

Possibly the greatest, during the rule of the Order, was the presence of corsairs, particularly from the Barbary coast, in the surrounding waters. At times their influence was so great that not only were they able to discourage normal traders but even to disrupt the Island's food supplies. For example, late in the seventeenth century, corsairs became such a menace in the channel between Malta and Sicily that special armed protection boats were employed to patrol the area.¹ In 1695 a tartan and a brigantine were armed for this purpose² and later in the same year yet another tartan was allocated to the task.³ Still the shipping losses mounted and food supplies became scarce. In 1696⁴ the Galley Squadron had to be sent to Sicily to bring supplies. The following summer⁵ only five galleys went to join the Venetian navy on a campaign and the remaining two were retained for patrol purposes. This had the necessary effect and by the end of the summer the channel was clear. The incident was extreme but it illustrates a problem which afflicted Maltese trade right until the beginning of the nineteenth century, when British naval power purged the area of its "Oriental riff raff." Brydonne came to Malta in the latter part of the eighteenth century and he could still refer to the seas as being infested with African pirates.

Such a situation was clearly a disincentive to normal trading relations and the presence of the powerful corso, in some senses, only inflamed the problem. The Order's crusading activities and the profits

1. A.O.M. 264, f.30v.

2. Ibid. f.78.

3. Ibid.

4. Ibid. f.124.

5. Ibid. f.137.

Drawn from the corso made the Religion's position ambivalent. Even the Bay of Tunis¹ found the situation distasteful and in 1735 he approached the Order. Having announced his displeasure with corsairs using Sfax and Tunis he referred to the harm they did to commerce and sought the Religion's help in eradicating them.

Another disadvantage which traders based upon Malta suffered was the Island's dependence upon Sicily for many essential supplies. This dependence was often exploited for political ends. A disruption of trade was threatened in the rule of Lascaris (1636-57) when France and Spain were at war and the latter feared that the French dominated Order might give France help. In 1712² the Viceroy of Sicily forbade trade with Malta and in 1752³ the Neapolitan King, Bourbon Charles VII, who by this time controlled Sicily, closed his ports and shores to all shipping flying the Maltese flag. The results were soon felt, not only amongst the merchants, but also in the country areas which were deprived of a large outlet for cotton exports. The disruption was not wholly a bad thing for trading contacts were made with North Africa. Although grain had already been obtained from Tunis in the previous century.⁴ There are, in fact, rather more references to trade between Malta and Moslem states than would be anticipated considering the crusading nature of the Order.

Another major problem was plague and whilst this was a disadvantage common to all ports Malta, by its proximity to North Africa and the Near

1. A.O.M. 269, f.68v.
2. A.O.M. 266, f.45v.
3. A.O.M. 270, f.232.
4. A.O.M. 261, f.185v.

East, was well placed to pick up the 'peste' fairly regularly. An outbreak of 'peste' at any port led to its closing. Thus a plague developing in Malta, or a Sicilian port, had disastrous effects on Maltese trade. In Malta disease was usually supported by famine as food supplies were cut off. This happened in both the great plagues, those of 1591 and 1676. After the former, trade was not freed until the beginning of 1594.¹

During the sixteenth and seventeenth centuries the pattern of Maltese trade altered slowly and was primarily concerned with importing foodstuffs and exporting cotton. Although in the seventeenth century a number of general traders were beginning to use Malta as a base.

In the seventeenth century nothing could be exported from Malta without a licence² and it was particularly difficult to export metals, armaments³ and foodstuffs.⁴ Entrepôt trade was discouraged by the fact that goods could not be off loaded from one ship to another or stored ashore, without the intervention of the customs⁵ and dues were high.

In the eighteenth century the pattern changed. Malta began to develop as a convenient "half-way house for Levantine trade" and many merchants bonded goods or caused their ships to undergo quarantine there.

⁶ In 1733 dues on transferred cargoes were reduced from 6s 1/3rd. to 4s and a similar rate per annum was applied to bonded goods.⁶ There were even attempts to create a free port.

1. Del Pozzo, op. cit. 1715, p.340.

2. R.M.L. 641, 1660, pp.97-98.

3. Ibid. 1660, p.87.

4. Ibid. 1658, p.73.

5. Ibid. 1697, pp.217-220. A recapitulation of an earlier 'bando'.

6. Cavaliero, op. cit. 1960, p.86.

It is unfortunately impossible to plot the volume and direction of Malta's eighteenth century trade. The Order gave safe conducts to certain classes of vessel using the Island and the issue of these documents is recorded in the 'liber bullarum' for each year. It is clear that only a relatively small proportion of the vessels calling at Malta were involved in these formalities and destinations are rarely given.

There are records of ships doing quarantine at Malta, in the latter part of the eighteenth century, and Cavaliero¹ has done an analysis of these to show that "the greater part of the shipping that used the island was French: in the seventeen-seventies sixty per cent of the ships doing quarantine in Malta were French. In 1780, of 207 ships doing quarantine, 132 were French, 17 Ragusan, 18 Venetian and 12 Maltese." But only a proportion of the vessels using Valletta came from ports the entry of which involved subsequent quarantine. A much higher proportion of Maltese boats were probably engaged in trade with European ports, in particular those of Sicily. In this local trade the Maltese 'speranaro', a small flat boat propelled by six oars and a sail, was supreme. This type of vessel also ventured to more distant parts.² The other principal types of vessel used by Maltese traders and traders based on Malta, were the brigantine and the tartan but the 'pollacca', 'martingana' and 'pinco' are mentioned as well.

Apart from entrepôt goods Malta also exported her own products. Whilst the list of these goods, apart from cotton, is extensive - lichen, oranges, lemons, pomegranates, seeds, stone, filigree, ash of kalimagnum, etc³ - the amounts involved were trifling.

1. op. cit. 1960, p.89.

2. A.C.M. 584, 1780, f.183v.

3. Louis de Boisgelin, op. cit. 1805, pp.109-110.

The Corso.

Malta based shipping was involved in another rather peculiar form of 'trading'. Piracy had had a long association with the Island but during the seventeenth century it became highly organised and extremely profitable. Many vessels were engaged not only in trade but, where the opportunity offered, in privateering as well. For instance, in 1632 a corsair was given a safe conduct to go on a normal trading voyage¹ and another example, taken from the end of the eighteenth century, shows a captain acquiring "Lrae Patentes, ad piraticum, et mercaturam".²

In some respects crusading can be seen as a licence to pillage and the Order had not been in Malta long before Knights began to fit out vessels, at their own expense, to go on sweeps for booty amongst Moslem shipping. Del Pozzo³ mentions such an enterprise in 1574 and this was clearly not the first instance. Grand Master Verdalla^e (1581-95) equipped his own galleys⁴ and by the end of the century the industry was well developed. In 1608 the Order decided to regulate the activity and issued the "Statuti et Ordinationi del Armamenti".⁵ This document is long and complex and must indicate that the industry was already large.

The rules governing the corso were simple. Boats were licensed in Malta - given the flag - to attack Moslem shipping. This gave the vessels status in international law. Additionally the Order provided secure basal facilities at Malta. In return all booty had to be sold at a public auction in Malta and the Order took ten per cent of the resulting money.

1. A.O.M. 462, 16th April, 1632.

2. A.O.M. 584, f.210.

3. op. cit. 1715, p.100.

4. E.W.Schermahorn, op. cit. 1929, pp.137-138.

5. R.M.L. 1210, ff.231-257.

Now, whilst this arrangement was well suited to the needs of the time when the Moslems were expansionist and feared, it was clearly not going to survive long once normal trading relations were established with Middle Eastern countries. When the great powers, and particularly France, were involved commercially with Turkey they brought pressure on the Order to curtail privateering. The corso declined very quickly in the eighteenth century.¹ However, during the seventeenth century, privateering was one of the Island's principal industries. Three classes of people were involved as ship owners. Firstly, members of the Order, secondly Maltese and, thirdly foreigners, using Malta as a convenient base for operations. The last group included Frenchmen, Corsicans, Tuscans and other nationalities. All three groups of owners employed largely Maltese crews.

In the best years for the industry there were, Cavaliero suggests,² twenty to thirty boats going 'en course' annually. A visitor to Malta in 1686 was told that in the previous year some fifty to sixty pirate vessels had used the base.³ Whilst Schermahorn⁴ states that in 1669 there were thirty corsairs sailing under the flag of the Order. Even if we take the lower figures as representing the true number of vessels, the corso was obviously an industry of importance. It is probably an exaggeration to state, however, as Cavliero has done, that between 1650 and 1750 "half the able bodied male population was at sea during the greater part of the year."

1. R. Cavaliero, 'The Decline of the Maltese Corso in the XVIIIth Century,' H.M., 1959.

2. Ibid. p. 235.

3. B.M., 19306, (ADD.), f. 55.

4. op. cit. 1929, p. 231.

The later part of the seventeenth century seems to have seen a zenith of piratical activity and the 'liber bullarum' for the year 1679¹ gives a clear picture of the time. In April of that year a Maltese was given the flag and permission to make war on the Moslems, his partner in depredation was a Frenchman, resident in Malta, who commanded a brigantine. Shortly afterwards a Francesco Real was given the flag, then two more Maltese, a Knight and another French^{man} with a galiot and a brigantine. At the same time there is a mention of a Maltese boat going to Tunis with slaves. There is no reference ^{t.} of them being ransomed so perhaps they were Christians taken from a remote Mediterranean island? Such things were not unknown. In 1707² a complaint reached Malta from "Don Giorgio di Brindisi dell'Isola di Sira" stating that the island was being continually attacked by Maltese corsairs.

This type of activity was an embarrassment to normal commercial relations and efforts were made, by European powers, to curtail the Maltese corso. In 1647 the Grand Master was forced to forbid captains to go within ten miles of the Palestinian coast³ and in 1697 the distance was increased to fifty miles.⁴

Whilst the great powers applied diplomatic pressure Greek traders found a legal method of containing the Maltese crusaders and halted the corso in the courts. Cavaliero⁵ summed up the position in the eighteenth century as follows: "between 1722 and 1743, the corso had been languishing visibly. In 1723 and 1729 there had been seven corsairs at sea, but after

1. A.O.M. 487.

2. A.O.M. 265, f.174v.

3. A.O.M. 258, f.106v.

4. R. Cavaliero, op. cit. 1960, p.82.

5. op. cit. 1959, p.233, F.N.

that never more than three, except in 1739, when there had been five, until 1744. In that year there had been a slight pickup and for three years after there were four to five at sea, but it was not until 1767-8 that the number rose again beyond three, to nine and six respectively.'

A comparison of the 'liber bullarum' for 1780 with that of 1680 is interesting. In the latter most captains were taking the flag to rob Moslems, by 1780 the greatest number are requesting letters patent to sail to the "four parts of the world", for trading purposes. Only occasionally was a licence granted to sail 'en course' and even then the Levant was usually forbidden and captains went down onto the Barbary Coast to pillage what they could.

As we have seen the decline of the corso coincided with the rise of Malta as a normal trading centre so that the shipping industry, as a whole, did not suffer greatly by the change.

The Slave Trade.

Malta was for a long time one of the largest slave markets in Europe. Both the corso and the Galley Squadron procured large numbers of captives in the course of their activities. The Order held a vast number of captives and slaves were used to row the galleys, work on the fortifications and to act as servants. The numbers were so great that slaves, whether belonging to the Order or in private employ, were required to sleep in a special prison each evening to forestall rebellion.¹ There were slave prisons in Valletta and the Three Cities.

1. Del Pozzo, op. cit. 1715, p.155.

Over and above their own needs for labourers the Order had slaves which it was prepared to sell to other powers and there were also a considerable number of private enterprise slave traders on the island.¹ It is interesting to note that in 1672 slaves were purchased in Malta, by the British, for the Tangier galleys.²

1. G.Wettinger, 'Coron Captives in Malta: An episode in the history of slave dealing', *M.H.*, vol. 2, 1959.
2. 'The English at Tangier,' English Historical Review, 1911, pp. 469-481.

CHAPTER VIII

CONCLUSION.

During the latter part of the eighteenth century the power, usefulness and importance of the Order of St. John were in rapid decline. Careful administration, particularly by Grand Master de Rohan (1775-97), and the great traditions of the Order helped to keep decadence at bay but nothing could disguise the fact that the Knights lacked a clear purpose in life. When the French commanderies were confiscated in 1792 the organisation was no longer economically viable. The French Revolutionary Government was completely opposed to all that the Order stood for and having no sympathy for such an aristocratic institution it had no qualms about taking over Malta should this prove useful. After much scheming the Island was eventually invaded by Napoleon in 1798. By this time the Order was so weakened that the French invasion force swept away what remained of the Knights' yellowing shred of nobility almost without opposition, in spite of the great strength of the defences. Napoleon wrote in his memoirs

"The place certainly possessed immense physical means of resistance, but no moral strength whatever."¹

On capitulation the Order was expelled from the Island leaving behind most of its property. A number of French Knights joined Napoleon, others returned to their homes but a substantial number trooped off to Russia and the protection of the Czar who was made Grand Master.

Napoleon only remained on Malta for a few days but in that short

1. Quoted by R.Cavaliero, op. cit. 1960, p.231.

time he attempted to reorganise the Island on Revolutionary lines. Slaves were freed, escutcheons chipped from walls, patents of nobility burnt, a governing commission, on which the Maltese were well represented, was set up but, fatally, the reforms attempted to interfere with the power and privilege of the Roman Catholic Church in Malta.

dal/- Having decreed reorganisation Napoleon left for Egypt leaving behind a garrison of 3,000 men. At first unrest was slight but on 2nd. September, 1798, the French attempted to sell the property of the Carmelite Convent of Mdina. The Maltese rose and slaughtered the garrison of the town. The revolt spread quickly and within a short time the French force was contained within the walls of Valletta. A British naval squadron blockaded the harbour.

It took two years to starve Valletta out and the surrender of the French created a complex political problem regarding the status of the Island. The British, Maltese, Neapolitans, Russians and the Order could all advance claims, of varying validity, as rightful owners of the Island. The Russian claim was largely fictional, while the Neapolitans had a case based upon the former attachment of Malta to the kingdom of Sicily, which they now held. However, Naples was beleaguered by France and it was unlikely that Britain, who had received the French commander's surrender, would give up the Island to a power within Napoleon's grasp. This view was reinforced when the ports of the Kingdom of Naples were closed to British shipping (1801), in the terms of a peace treaty imposed by the French. Previous to this date relations between Naples and the British Navy had been, on the whole, good but when Britain was deprived of the

Neapolitan ports in the central Mediterranean Malta began to look more attractive to her. However, in public utterances Britain disclaimed all desire to retain the Island even though the Maltese, who had certainly done more than anyone to expel the French, wished to place themselves under the protection of His Britannic Majesty. The Great Powers were tiring of war and there were moves towards a peace treaty. Malta could be neutralised, and thus removed from contention, by allowing the Order to return with tenure guaranteed by all the powers involved. The Maltese were completely opposed to the return of the knights. However, the Treaty of Amiens (1802) contained a clause returning Malta to the Order. Not only were the conditions attached to the clause unworkable but the Order's disarray and penury made a resuscitation extremely difficult. The Religion never returned to the Island. Britain became increasingly reluctant to give up Malta. As early as 1801¹ Ball had written on the commercial and strategic advantages of retaining the Island. He also gave details of the assets which his administration had inherited from the Order and claimed that Malta could be retained without any call on the British Treasury. At the same time English merchants began to set up trading houses on the Island. Documents of the period suggest that Ball's administration was operating in something much more than a holding capacity and there appears to have been a dichotomy in the British viewpoint. On the one hand the Government at home were not at all anxious to retain the Island whilst, on the other, the administrators based on Malta, and particularly Ball, were convinced of the

1. P.R.O., C.O., 158.1.

Island's worth. The latter group seem to have got on with administering and developing Malta in the hope that Whitehall would be converted to their view. There is some evidence to suggest that Whitehall may have been playing a two handed game. To some extent Ball was encouraged to administer the Island in a way which undoubtedly suggested a lengthy British occupation. At the same time the Great Powers were led to think that Britain was only interested in peace and satisfactory arrangements for the neutrality of Malta.

The Treaty of Paris (1814) gave Malta to Britain although long previous to this the British had decided that their stay would be a long one. For instance the lengthy and detailed "Report of His Majesty's Commissioners for enquiring into the affairs of Malta" 1812 is an indication of the fact.

For the Maltese and the British the events of 1798 had a satisfactory conclusion. The Order, as it was then constituted, virtually became extinct in that year, the Knights melted away whilst the Religion's possessions were taken over by various powers. The Order of St. John of Jerusalem, with a headquarters in Rome, still exists today with greatly modified aims and organisation.

Few Maltese mourned the passing of the Order. By the end of the eighteenth century the Knights were heartily disliked and their arrogant assumption of superiority, no longer supported by achievement, was resented. Early in the nineteenth century Coleridge, who spent some time in Malta recorded that the Maltese showed complete "ingratitude to the Order to whom they owe everyting". The Order, wittingly and unwittingly, had altered the

whole fabric of Maltese life in the two and a half centuries of its rule. The economy of the Island had been transformed, the settlement pattern reshaped, whilst the outlook and way of life of a large section of Maltese society had been basically altered.

When the Knights came to Malta hardly one in ten of the indigenous population could be classed as a town dweller. By 1798 fifty per cent of the population lived in the cluster of towns which the Order had built, or developed, around the harbours. The harbour towns served not only as fortresses but as administrative centres and as a link between the life of the countryside and the outside world. The settlement pattern and economy of the Island came to be focused upon the harbours and particularly Valletta.

The economy of Malta in 1530 was impoverished, the Order had by stimulants, encouragement and protection produced a thriving commercial community. With a higher standard of living and contacts with the Order and Europe in general had come changed outlooks. The Knights had come to a poor backward community, they left a prosperous society in contact with the mainstreams of European life.

Not only did the Knights create prosperity during their stay but they have, in a peculiar way, been responsible for Malta's continued economic health since 1800. As a military base Malta has several disadvantages. Certainly the Island is well placed strategically and possesses some fine harbours but any base requires a large amount of capital to be spent on development before its potential is realised. In Malta's case this expense is made greater by the lack of local resources. The Order spent vast sums

on developing and securing the harbours of Malta and it was this high state of development which attracted Britain and France as the Religion's power waned. Neither could allow the other to possess such strength. By attracting British naval power the Order's investments insured the prosperity of the Island for another century and a half.

Malta's physical background has, basically, played a relatively small part in the events described in the previous chapters. Changes in political boundaries, spheres of influence and strategic outlook have been the real determinants of Malta's military importance and economic opportunities. Superficially Malta may appear to occupy an important position in the Mediterranean but this importance is only realised in certain political conditions. As a base Sicily is so superior to Malta that if both islands are controlled by the same power then the strategic importance of Malta is small. In this light the coming of the Order to Malta was exceptionally fortuitous. If Charles Vth had decided to hold the central Mediterranean entirely by use of his own resources almost certainly he would have done so from Sicily. Malta would have been no more than an auxiliary base for operations. At just the time when the central Mediterranean was threatened the Order asked Charles Vth for help. Malta was well suited in size to the Religion's needs and, as the Knights were something of a political embarrassment, remote enough for the Emperor to place them there with a minimum of worry. Malta, too, was poor and sufficiently worthless for the gift to be made without damage to the Imperial coffers. Thus it has been from a complex web of personal, historical, geographical, political and religious factors

that Malta's prosperity has grown.

In spite of the exceptional economic growth in Malta under the Knights the Island was still unbalanced economically and basically the economy depended upon the imported wealth of the Order. At first, under British rule, it appeared that the old reliance on military spending was to be overcome. In 1801 Valletta was declared a free port and when the Napoleonic wars warmed up again it "became the great Depot for neutral as well as British merchandise" finding its way into Europe via the Adriatic in spite of embargoes. Entrepôt trade with the Levant also developed and British, Maltese, German, Italian and Greek trading houses were established. But all this was essentially a trade boom stimulated by artificial conditions and with the cessation of hostilities it collapsed. Henceforth, apart from another boom following the opening of the Suez Canal, the economy of Malta came to rely on British military spending to an even greater degree than it had done upon the Order. The situation was aggravated by the collapse of the local cotton industry in the face of competition from other sources. British imperial expenditure began to reach high levels around the middle of the nineteenth century when there were a number of military crises and the large scale development of the small dockyard inherited from the Order was undertaken. From this point the economy developed to the stage where it could be concluded with validity, by Thomas Balogh, that "in the last resort nearly all the income and employment on the Island are derived from the U.K. Government". The seeds of this situation, as with so much of Maltese life, were sown during the rule of the Order of St. John of Jerusalem.

APPENDIX IThe Streets of Valletta.

A) Longitudinal Streets

~~Marsamxett Street~~

Marsamxett Street

West Street

St. S. Michele.

Old Mint Street

St. S. Sabastian.

Old Bakery Street

St. S. Giovanni.

Strait Street

Kingsway

St. S. Giorgio.

Merchants Street

St. S. Giacomo.

St. Paul's Street

St. S. Paolo.

St. Ursula Street

St. S. Luigi.

B) Streets running across Peninsula from Grand Harbour to Marsamxett.

Windmill Street

South Street

Britannia Street

Strada Pia

St. John's Street

Strada del Monte

St. Lucia Street

Strada del Vittoria

Old Theatre Street

Strada San Salvatore.

Archbishops Street

Strada dei Greci and S. del Popolo.

St. Christopher Street

Strada della Fontana.

St. Domenic Street

Strada san Marco.

St. Nicholas Street

Strada S. Pantaleone.

Old Hospital Street

Strada della Fortuna.

North Street

Strada S. Elmo

APPENDIX IILIST OF GRAND MASTERS OF THE ORDER OF ST. JOHN

Philippe Villiers de L'Isle-Adam (France)	1522-34
Pierino del Ponte (Italy)	1534-35
Didiers de Saint Jaille (France)	1535-36
Juan de Homedes (Aragon)	1536-53
Claude de la Sengle (France)	1553-57
de 1. Jean de la Vallée (Provence)	1557-68
Pietro del Monte San Savino (Italy)	1568-72
Jean Levesque de la Cassière (Auvergne)	1572-81
Hughues de Loubenx-Verdalle (Provence)	1582-95
Martin Garzes (Aragon)	1595-1601
Aloph de Wignacourt (France)	1601-22
Luis Mendes de Vasconcellos (Castile, Leon and Portugal)	1622-23
Antoine de Paule (Provence)	1623-36
Jean-Paul Lascaris Castellar (Provence)	1636-57
Martin de Redin (Aragon)	1657-60
Annet de Clarmont de Chattes-Gessan (Auvergne)	1660
Rafeal Cotoner (Aragon)	1660-63
Nicolas Cotoner (Aragon)	1663-80
Gregorio Carafa (Italy)	1680-90

Adrien de Wignacourt (France)	1690-97
Ramon Perellos y Rocafull (Aragon)	1697-1720
Marcantonio Zondadari (Italy)	1720-22
Anton Manoel de Vilhena (Castile, Leon and Portugal)	1722-36
Ramon Despuig (Aragon)	1736-41
Manoel Pinto de Fonseca (Castile, Leon and Portugal)	1741-73
Franciso Ximenes de Texada (Aragon)	1773-75
Emanuel-Marie de Rohan-Polduc (France)	1775-97
Ferdinand von Hompesch (Germany)	1797-98

		Prismatometrical Stations in the Fort Survey Maps & Plans, from 1850-1859, of of Joint Survey from Fort Survey Maps & Plans, from 1850-1859, of	
Country Cart Tracks		Other 1850-1859	
Footpaths		Intersected Junction	4
Site of Old Railway		Church or Chapel, with Tower or Spire	4
Approach, across ground		Church - without either	4
Reservoirs, Ponds, Water		Windmill	4
Reservoirs, Ponds, Water		Lighthouse	4
Reservoirs, Ponds, Water		Bridge	4
Pumping Stations, Potable Water		Pole Stations	F
Spring		Milestones	F
		Distances from Kingston to other places	F

Contour interval 25 feet,
every 100 feet accentuated.