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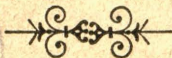
A HANDBOOK TO MALTA

FOR

All ranks of both Services

BY

Lieut. Colonel Luttmann-Johnson.

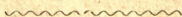


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TO

SIR ARTHUR LYON FREMANTLE, G.C.M.G..C.B.



THIS SMALL WORK IS, BY KIND PERMISSION,
RESPECTFULLY DEDICATED
IN THE HOPE IT MAY BE USEFUL.

A HANDBOOK TO MALTA.

*General
Description of
the Islands,*

Malta is about twenty miles long and ten broad, it is an egg-shaped Island, and its longer axis runs North West and South East. The highest ground is on its more Southern side, where there are inaccessible cliffs from two to four hundred feet high. The more Northern coast is protected by a line of strong forts stretching from Fort Madalena to San Leonardo. Forts Delemara and the Wolseley battery protect the South East side, and the Victoria lines the North West. Four distinct ranges of hills stretch across the Island on the latter side; and on the South East is a spur which, starting from the high ground near Zurricco, divides about Chircop into two parts, one trending past Zeitun to San Tommaso is called the Zeitun spur, the other on which Tarxien is situated is called the Giacobbo spur.

To defend the Island every advantage is taken of these ranges and spurs and a defence scheme has been carefully drawn up showing how it can best be done. Non-Commissioned Officers and men are constantly practised in signalling, telegraphy, great gun drill and mobilization, as well as in the defence of the Victoria lines in order to be ready and efficient in case of war.

Comino is now used as a quarantine station; its inhabitants have been withdrawn and it has been allowed to go out of cultivation.

Gozo is about five miles long and three broad; its villages are very scattered and the inhabitants strictly agricultural. Its flat-topped hills and rocky ravines are its chief characteristics, and its caves and natural bridges are extremely interesting.

Geology.

It has been said that the Maltese Islands have been several times immersed beneath the sea, and the facts, that the Mediterranean is liable to Volcanic action, that the Islands form part of a long line of limestone rock which stretches across from Sicily to the African coast, and that sea shells are found embedded in the rocks at various elevations sometimes even high up on the dry land, would lead one to credit this statement. It is also urged by geologists that this Island once formed part of the great African Continent and the facts that bones of large animals, that can only have existed in semitropical climates, have been found here, and the configuration of the North West side of the Island consisting as it does of alternate ridges and valleys, worn out probably by the action of a large river, will all tend to bear out this theory.

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Malta with its sister Gozo has from time immemorial been a place of importance to whatever race wished to hold the highway of the Mediterranean; whether Phœnician, Punic, Roman, or Arab. The earliest inhabitants of whom we have any trace are the the Phœnicians; they occupied the Islands about 1500 B.C. and used them as a connecting link between the mother-country (Syria) and their possessions in Western Spain. The

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Phœnicians combined daring and efficiency on the sea, with trade and commerce. They were leaders in culture and civilisation, having substituted the phonetic system of writing for the sign-writing of a bygone era. They established colonies and manufactories throughout the whole of the Mediterranean and traded even as far as the Scilly Islands and England. Their Mid-African Colony of Carthage held sway over a mighty empire stretching along the Coast from Tripoli to Morocco and comprising half the Spanish Peninsula. Under them Malta attained a high degree of prosperity, the inhabitants were rich, the country fertile. Cotton was much grown and the Maltese were renowned for their textile fabrics. Traces of the Phœnicians are to be found on the ruins of Hagiâr Kim and Mnaidra in Malta and the Torre dei Giganti in Gozo. The rockhewn caves near Bengemma are of Phœnician origin and many specimens of pottery, glass, and terra cotta sarcophagi, have been found in them.

The Greeks drove out the Phœnicians about 700 B.C. and coins which have been found in both Islands, and a few other remains bear evidence of Greek rule. About 480 B.C. the Carthaginians, anxious to regain the ancient possessions of their mother country, drove out the Greeks. The Islands were plundered by the Romans as early as the first punic war, and at the fall of Carthage 216 B.C. the Islands fell definitely under Roman rule. The Romans kept only a small garrison in the country and appointed a few state officers whilst the inhabitants continued to be governed under their own laws and customs.

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The traces of Roman houses and villas notably that at Città Vecchia with its Mosaics, Sculptures, and water supply are evidences of their sojourn here and the luxury they lived in. St. Paul was shipwrecked on the Island in 58 B.C. and the conversion of the Maltese to Christianity following the three months stay of the apostle and his companions, may be taken as a fact. It is probable that the old religion and the new went on side by side and that the catacombs at Città Vecchia and the hidden places of worship to be found here were used as hiding places in times of persecution.

At the partition of the Empire between Constantine's children Malta formed part of the Eastern Empire and was about 500 A.D. inhabited by people of Gothic origin till 870 A.D. when it was captured by the Arabs. The latter allowed a political state to the Maltese who assisted them against an invading force of Greeks of Constantinople.

In 1090 the Island came under the influence of the Normans and the Christian church was restored: it then passed successively to the houses of Germany, France and Spain, till in 1530 the Emperor Charles V granted it with Gozo and Tripoli to the Knights of St. John of Jerusalem.

The Order of the Knights of St. John was of very ancient origin. In 1080 some merchants of Amalfi established a convent-hospital in Jerusalem to assist and relieve poor and sick pilgrims who might find their way to the Holy-land in the cause of Christianity, this charity was so much admired and appreciated throughout Europe that priories were established to provide the order with funds, and members of the highest aristocracy

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joined it as Knights. In 1170 Raymond du Puy added a Military element to it; it thus became a military as well as a charitable, hospitable, and aristocratic order and took up arms in defence of Christendom against the Moslems. Adding chivalry to charity and fed as they were with funds as well as Knights and serving men from their priories in Europe, they became very powerful and were a great assistance to the various crusades that set out from Europe to the Holy-land.

The Moslems however proved too strong for them in the end, and in 1291 they lost their last stronghold in Palestine and took refuge in Rhodes which they fortified and used as a base for further expeditions against the Moslems ; they established a navy and such was their energy and activity that they eventually proved themselves to be in a better position, whilst established in the Island of Rhodes, to support the cause of Christianity than they were in Palestine.

Incurring the displeasure of Solyman the Magnificent, Sultan of Turkey, they were besieged in 1522 by an overwhelming army of Turks, who were at that period in the very zenith of their power and could boast of the best Artillery and Siege equipment in the world. The siege lasted six months: L'Isle Adam was grand master of the Knights and although the most heroic resistance was made and the Grand Master fought personally on the battlements, he was forced to capitulate and, with the remnant of his Knights and serving brothers, some 4000 souls, he found his way to Crete and finally in 1530 established the order in Malta, which had been given him with Gozo and Tripoli by Charles V of Spain.

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Malta was very different in those days to what it is now, St. Angelo was the only fort protecting the harbours and a small town called the Bourg or Borgo was situated close behind it. Città Vecchia, then called Notabile or Imdina, was the capital and consisted of a few houses surrounded by indifferent fortifications, and where Valletta now stands was a bare inhospitable ridge of rock called Mount Sceberras. The country however was fertile, and there were some 20,000 inhabitants.

On arrival in Malta the Knights commenced to strengthen their position, they built St. Elmo on the site of an old Arab fort, and on the election of the Grand Master La Sangle (1554) they fortified the Senglea ridge and called the town that sprang up within it after that Grand Master.

La Valette was elected Grand Master in 1557 and the ire of Solyman the Magnificent having been roused on account of the capture of a galleon, the property of the chief eunuch of the imperial harem, a powerful expedition was fitted out for the capture of Malta and the annihilation of the Knights. The Turkish land forces were commanded by Mustapha, the galleys by Piali, and Dragut, a great sea captain, was sent as general adviser. The expedition landed at Marsa Scirocco and St. Thomas's bay and after a while established batteries on Mount Sceberras and Point Dragut (Tigné,) and opened trenches against St. Elmo. Time after time this fort was assaulted and time after time the Knights drove the enemy back. The Garrison grew despairing but La Valette after each assault removed the wounded across the harbour to St. Angelo, and relieved the garrison with fresh troops.

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At length on Dragut's advice a battery was established to rake the water way between St. Angelo and St. Elmo, reinforcements were thus cut off and St. Elmo fell after a months' siege. In the final assault no quarter was given, and the defenders, whether they were fit for duty, or wounded, or even dying, fought to the last on the battlements.

Mustapha now directed his attention to the Senglea ridge. As it was impossible to attack it by a combined attack by sea and land, owing to the guns of St. Angelo which protected it from the sea, he caused galleys to be dragged across from the Marsa Muscetto and launched at the head of the Grand Harbour so as to take it in reverse. To counteract this scheme the Knights erected a barrier of piles connected with chains across the grand harbour between Corradino and Mount Sceberras: this was attacked by the Turks swimming with their swords in their mouths ready to destroy the defenders. The Knights however employed similar tactics and a furious hand to hand fight ensued in the water, but the Maltese being the better swimmers signally defeated the enemy, very few of whom succeeded in gaining the shore, and those that did so, were either in a wounded or half drowned condition. Batteries were now opened on Corradino hill and a combined attack both by land and by water attempted. The walls were breached by the batteries and the assaulting column succeeded in gaining the battlements but a gallant counter attack drove them back in confusion. Those that attacked by water rounded the barrier in their galleys and rowed straight for Senglea. Coming under the guns of St. Angelo (which had been filled to the muzzle

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with ragged pieces of iron, bullets etc. and resembled case) the gunners waited till the galleys were within 180 yards and then fired salvos, sinking the galleys and annihilating both galley slaves and soldiers.

Fresh batteries were now opened on Mount Salvatore and the Margarita heights and a simultaneous attack on both Senglea and the Bourg attempted. The success of this attack seemed to be secured when the garrison of Città Vecchia, hearing the unusual cannonade, made a diversion with a small number of Cavalry on the enemies' camp on the Marsa; the camp was filled with sick and wounded; the guards were watching the fight, and the Cavalry massacred every soul in camp. This gave rise to a rumour throughout the Turkish Army that reinforcements had arrived from Sicily and that the retreat to their boats in Marsa Scirocco was cut off. Mustapha believing the rumour, raised the siege, and made preparations to cut his way through to his boats. Thus ended the memorable siege of Malta.

The siege had lasted three months, the Turks were within an ace of succeeding, they had lost many thousand men in each attack, and much to the mortification of Mustapha the failure of his ultimate success was due to a rumour which turned out to be false.

A few days afterwards the expected reinforcements from Sicily actually did arrive, they landed in Melleha bay and marched to the relief of the Bourg; a decisive battle was fought, and Mustapha only saved his army through the valour of a rear guard of 1500 men under Hassan, an Algerine Corsair, who managed to keep the combined forces of the Knights and Sicilians at bay whilst the Turk-

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ish troops embarked. In commemoration of the victory the Bourg was rechristened Vittoriosa, the name it now bears.

The Turks returned to Constantinople and commenced to fit out a still larger expedition to avenge their defeat. A fire, however, having destroyed their ships and stores, and Solyman having died in the meantime, the expedition was abandoned and the Knights were allowed for a short time to rest in peace and improve their new home.

The siege had shown how essential St. Elmo was for the safety of the harbours and La Valette not only commenced to repair and strengthen that fort, but he resolved to occupy the whole of the ridge of rock called Mount Sceberras with a new city and to surround it with fortifications of such magnitude as should render it safe from an attack of an enemy.

Europe had looked on with bated breath at a siege which had saved them from the encroachments of the dreaded Moslems, and in grateful recognition liberal subscriptions flowed in from all sides. The ceremonial of laying the foundation stone of the new city was performed by La Valette with great pomp and magnificence on the 28th March 1566. Thus it was that the beautiful city of Valletta, that city built "by gentlemen for gentlemen" sprang up, and the exquisite palaces, churches and auberges of which the city so proudly boasts had their origin. An Italian Engineer named Frank Laparelli had control of the work, his bust in bronze is on the Porta Reale facing the city.

The Knights were divided into several sections called languages representing the priories and properties they possessed in the

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different countries of Europe and from which they obtained their revenues. The following languages existed namely Provence, Auvergne, France, Aragon, Castile, Portugal, Italy, and Germany and the Auberges in which the Conventual Bailiff, who was the head of each language, held his Court, are too well known to be recapitulated here. The Palace was the residence of the Grand Master and was built at the time of the Grand Master La Cassiere 1574—1581 : it was called the convent, and St. John's Church built about the same time was the conventual church.

It may be asked why there was no English Section. This Section had been established by Henry I of England and owned the rich priory of Clerkenwell. At the time of the reformation however their property was sequestered by Henry VIII and as it was afterwards confiscated by Queen Elizabeth the language lapsed. It was partially reinstated under the title of Anglo-Bavarian language a few years before the downfall of the Knights at the end of the eighteenth century.

The Grand Master of the Knights of Malta entered into communication with the various Courts of Europe on terms of absolute equality; the order was considered a bulwark to Christianity as it protected Southern Europe from the inroads of the Infidels and on this account the Knights were treated by the crowned heads with much friendship and consideration. The Grand Master surrounded himself with the same state as usually accompanies royalty. The same etiquette was insisted on at his public levies, (which were very frequent), as finds favour in the royal courts of Europe and the ceremonial of the table when the Grand Master was present was observed with

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the greatest possible nicety, regularity, and order.

The conventual bailiffs or the heads of the various languages kept up a similar ceremonial, as befitted alike Knights belonging to the highest aristocracy of Europe, and the palaces such as the Castile in which they held their court.

Many country houses and palaces were built by the Knights and surrounded by fine gardens. Verdala was erected by the Grand Master of that name in 1582 and the gardens of Boschetto were laid out and used as hunting grounds. St. Antonio with its world renowned orange groves was built some years later (1623 to 1636) by De Paule and there are many smaller residences throughout the country, which were built by the Knights and which may be known by their coats of arms on the walls.

The stupendous fortifications around Valletta and the three cities were as a rule planned by Italian Engineers and erected by slave labour. The Knights captured thousands of those unfortunate people in the expeditions against the Moslems, they were often treated with great cruelty, and were used as galley-slaves, labourers, and as an article of merchandise.

The fortifications which La Valette had inaugurated (1566) were much improved under the Grand Master Antonio de Paule (1623) who, at the suggestion of an Italian Engineer named Floriani commenced the outwork of that name. The G. M. Lascaris reigned over Malta from 1636 to 1657; he added ravelins to the Valletta enceinte and secured the safety of the Grand Harbour by fortifying Margarita Hill on which he erected three bastions plan-

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ned by a Dominican friar Vincenzo Firenzuola (1640). Fort Lascaris, now the saluting battery, was also built under the Grand Master Lascaris. That vast bulwark the Cottonera lines connecting Victoriosa with Senglea was planned by an Engineer called Valperga under the Grand Master Cottoner (1663—70,) they were intended to serve as a safe retreat for the whole population on the Eastern side of the Island, but they were still unfinished when the English occupied the Island in 1800. Fort Ricasoli was also designed by Valperga and was erected at his own expence by a Knight of that name. Fort Manoel was designed by Chevalier Moudon ; it was built in the reign of Grand Master Manoel (1726) whose statue in bronze has been removed from the fort to the Maglio gardens. Tigné was the last fort built by the Knights, It was finished in 1796 under De Rohan : it closed the entrance to the Marsamuscetto harbour and completed the security of both harbours.

The Knights, however, have left many traces in the Island in addition to their buildings and fortifications. The Wignacourt aqueduct was constructed in the time of the Grand Master of that name (1601) by father Tommasucci, a Jesuit. It conducts water from the Bengemma hills to all parts of Valletta. The G. M. Manoel built the theatre of that name which is the oldest theatre in use at the present day. The village of San Paolo is called after the Grand Master De Paule. The Grand Master De Redin built fourteen watch towers round the coast as a security against pirates, and the Code of Law is due to De Rohan, who was the first Grand Master to receive the Maltese nobility and gentry at his court.

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The rule of the Knights was strong and vigorous as long as the strength of Turkey and the power of the Moslems encouraged the chivalrous spirit so necessary to combat hostile attacks with success, but when the power of Turkey began to wane and the necessity for chivalry and personal bravery disappeared, the power of the knights became more and more feeble and they were obliged more and more to rely on United Europe for support. The extinction of the order was the result. Even the just and considerate Government of De Rohan did not save the order. It was doomed to fall at the French revolution (1798). It was natural that an aristocratic order such as the Knights of St. John would not find favour with the republicans of France. The Knights were ruled at the time by an exceptionally weak Grand Master called Hompesch. The Island had already excited the cupidity of Napoleon. The whole of the possessions of the order in France had been confiscated, and the order was reduced to great straits for want of money. Napoleon, fully realizing the difficulties of the order, placed spies in Valletta to excite the Maltese to revolt, and when he landed with a large force in Marsa Scirocco on his way to Egypt, the spies had done their work and the subjection of the Island became an easy matter. In a few hours the French were in possession of the whole of Malta with the exception of the town of Valletta and in four days more, without bombardment, the city opened its gates. Hompesch was banished and the order of the Knights of St. John which had ruled over Malta for 250 years practically ceased to exist. The capitulation was signed on the 12th June 1798 and the Islands passed under French rule. Napoleon stayed six

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days laying down laws and regulations with a high hand, and collecting plunder from churches etc. He left his Lieutenant General Vaubois in charge but in less than three months the Maltese had revolted from the tyranny of their new masters and Vaubois, (inside Valletta with 6000 men) sustained a siege and blockade lasting two years during which time a small force of English assisted the Maltese in maintaining the blockade. On the 8th September 1800, Vaubois surrendered, and the Maltese (who had lost 20,000 men) placed themselves under the protection of the English. Sir Alexander John Ball was put at the head of the Council by the Maltese.

The treaty of Amiens (1802) provided that the Islands should be restored to the Knights of St. John but this was repugnant to the Maltese, so this part of the treaty was annulled and the Islands remained in the hands of England till in 1814 they were secured to her by the treaty of Paris under which she still holds them.

Thus on the 8th September next England will have held Malta for a century. It is not for us to ask what she has done and what she has left undone; certain it is that her rule has conduced to the welfare and happiness of the inhabitants, that the harbour has been useful to her fleet and the Islands convenient as a garrison. The vast strides in armament have necessitated constant improvements in the defence works which now extend from Benghisa along the coast to Madalena and thence across the Island to Fomm el Rih, and these works will be a lasting mark of England's greatness.

The various features in the country districts and their use for military purposes will now be

considered under the head of field sketching and reconnoissance.

*Field
Sketching.*

Although field sketching and reconnoissance may be difficult in Malta, the country lends itself to many schemes, and the small difficulties that arise make the subject all the more interesting. For instance the enclosed nature of the country, the high walls that bound the roads and the large number of buildings are all difficulties which have to be overcome, but on the other hand the existence of a large number of prominent objects such as churches and towers and the flat roofs of the houses, from which a good view can invariably be obtained, are a great advantage to field sketching.

The "modus operandi" would be to choose a base and form a network of triangles by intersecting to the prominent objects and to fill in the detail by resection on the points thus obtained. Having obtained a network of triangles the detail could be filled in by a squad of Non-Commissioned Officers, each man taking a separate square mile, and by this means, in a few days, a combined sketch of the whole Island could be made. The roads may also be traversed with a view of sketching the country on each side of them by taking offsets, or a square mile or so of country may be sketched, by either traversing the roads it contains, or resecting on fixed points.

*Reconnais-
sance*

Reconnoissance is simply the art of obtaining information, and it may be of a country or it may be of an enemy. The information gained is usually reported by either a verbal or written report, and by a sketch which is intended to illustrate or elucidate the report. A reconnoissance may be carried out by a Non-commissioned officer alone or he may

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be sent with two or three others, or he may be detailed to assist an officer in getting information.

On the eve of active operations a Commander is furnished with all information regarding the enemy and the theatre of war and he supplements this with a most careful reconnaissance of his own. During the war the Cavalry on both sides endeavor to keep in contact with their enemy in order that nothing should happen without being known and reported. A night march would never be attempted unless the ground had been thoroughly reconnoitred before hand. A river would not be crossed nor a march by day attempted without previous reconnaissance, nor would cavalry charge unless they knew the ground was clear of pitfalls. One of the chief objects of patrol duty is reconnaissance and an officer would never march a piquet out without carefully reconnoitring the ground as he went along.

A Non-commissioned officer making a reconnaissance should have a good eye for country and be able to distinguish between what information will be useful and what will not, he should have some knowledge of fortification and tactics, for he must know when houses, villages, walls etc., are capable of being made use of to gain a tactical end or secure some tactical advantage. If he meets the enemy he will require self reliance, coolness and courage in addition to intelligence as he may be placed in compromising and difficult positions and will require all these qualities to extricate himself and perhaps save his own life.

All objects in a country should be looked upon from a tactical point of view, houses

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and villages from their capability for defence, undulations for their capacity for concealing bodies of troops, woods with regard to their penetrability and the cover they afford, hedges as screens to hide the movement of troops, walls and banks for their defensive possibilities and hills for their capability of affording cover for troops and giving the command necessary for a good field of view and fire. Church towers should serve as look-out-stations. Roads and communications should be looked upon with regard to the manner in which they may facilitate the movement of troops, and obstacles such as quarries, escarpments, walls etc., with regard to the manner in which they may impede the enemy and keep him under fire. Foods stuffs should be looked upon with regard to their purchase, conveyance, and issue to the troops, buildings with regard to the number of men that can be billeted in them, and the soil with regard to the crops of food and fodder it can grow for the troops.

Reconnaissance reports are classified under headings and so we will now describe what should be observed in Malta under the various headings.

The Country.

The country is fairly cultivated, the fields growing two and often three crops a year, and the dry walls that divide them are carefully built and kept in good repair at great expense to the husbandman. For these reasons it is not considered desirable for troops to move over the fields and so the only way for them to appreciate the tactical value of the physical features is by constantly observing them, reporting on them, sketching them and adapting troops to them; and the smaller features are just as important as the larger ones.

The Country.

The fields and walls constitute an important element in all military operations in this island, and the question of their advantages and disadvantages in attack and defence is very interesting. It is thought that where plunging fire can be brought to bear on them they are a considerable advantage to the defence, and where the hills are steep and the terraces high and unscalable, and flanking fire can be brought to bear, the advantage to the defence is still greater. On level ground however the advantage, as far as infantry is concerned, would be with the attack but when it is considered that all the crowding at gaps and in lanes and roads would be very favorable to Artillery at longer ranges and with probably good command, the question becomes more equal. The walls would always afford good cover both for attackers and defenders, and the question of how they should be prepared for defence is an interesting one: it would perhaps be best to leave the wall as a revetment and bank up earth on the far side of it using sand-bags for head cover, but this must depend upon the position and height of the wall. It may be taken that a Lee-Metford bullet will penetrate six inches into the ordinary stone of this country so that all the squared stones are bullet proof, the bank of earth will hide the wall and prevent its being a target to the enemys Artillery or Infantry and the earth will be a protection, though not an entirely effective one, against Artillery and will reduce the splinters. It is not practical to dig trenches in the rock here, and the thin layer of soil thrown over the wall will entail very little labour—probably a man could do a linear yard in an hour if the wall is three feet high. In judging the

The Country. size of a field it will be well to remember that a field 70 yards square or a good stones' throw square would measure about an acre.

The Agricultural instruments are very primitive. On arriving in Malta and visiting the country districts one is at once reminded of the scenes described in the Old Testament. The wooden plough of quaint shape scratching the soil for about four inches deep is seen at every turn, the ox is seen treading out the corn, and in many fields one sees the cabin where the husbandman seeks shelter from the noon day sun, and the goat-herd calling his flock after him is very much "en evidence" both in town and country.

The soil in Malta is fairly fertile; it is very thin and gets parched in summer, but it is well tilled and watered from wells and tanks situated in the fields: the black clay soil is the richest, the dark red soil is also very fertile, and the soil becomes less so as it gets whiter and contains more lime; every vacant space is utilized, it is not uncommon to find carobs, figs and vines growing apparently on the bare rock and every little crevice is used for growing cereals. The most important crops grown are potatoes, (of which some thirty thousand pounds worth are exported annually) wheat and clover; barley, beans, onions, cumin, melons and indian corn are also grown, and wheat combined with barley, and cotton crops are grown on the poorer soil; a large number of vegetables are grown and the black clay soil is the most favourable for them. The oranges are unequalled and other fruit such as loquats, pomegranates, prickly-pear, grapes are common enough: The carob grows in all the rocky places and figs are so numerous that they

The Country. form a staple food in summer. There are about 16,000 sheep in Malta and Gozo very evenly distributed. The number of goats in Malta is about 9,000, whilst in Gozo there are only 3,000—Beasts in both islands are little seen as they are kept in stalls, and sheep and pigs are kept in caves and outhouses.

The Agricultural classes number some 15,000 souls and among the Industrial class some 2,000 are builders and masons, and 2,500 carpenters. Wheel-wrights, blacksmiths, stone quarrymen and stone carriers are also all important groups; indeed there is not a village without several carpenters and blacksmiths shops and the stone masons are renowned throughout the world for their handicraft. It was formerly the custom to adorn the outsides of the houses free of charge; it was considered one of the fine arts, and there is little doubt that much of the beautiful tracing on the Auberge de Castile was done in this way gratis.

The Population The population of Malta, including Gozo, must now number nearly 200,000 souls. The population is very unevenly distributed. In some parts of Senglea there are over 100,000 souls to the square mile; whereas in the parishes of Melleha and Dingli, the most sparsely populated parishes in the Island, there are only 175 and 277 respectively.

In examining this question we find that in Valletta and the three cities Vittoriosa, Burmola, and Senglea, the population is very dense: then there is a zone of thickly populated country extending for about three miles from the cities and embracing the overflow villages of Sliema, Hamrun, and Zabbar, and the large villages of Bir-

The population chircara, Curmi, and Zeitun, each containing some 7,000 inhabitants. Another zone of smaller villages of 2,000 to 3,000 inhabitants extends to 8 miles from Valletta, and beyond this the country is poorly populated, the inhabitants occupying isolated farm houses and small hamlets.

Città Vecchia must be taken by itself, it is the old town, and is called both Ūmdena and Notabile. It was the Capital of the Island when all the habitations round the harbour consisted only of a few miserable fishermen's huts in the French Creek. Rabato contains merely the over flow from Città Vecchia. There are also the sea side resorts of St. Paul's Bay, Bir-Zebbugia, and Marsascala which have sprung up of late years.

Villages.

The villages in Malta are very compact and are composed of solidly built masonry houses with the usual flat defensible roofs. The streets are narrow and tortuous and are lined throughout by houses. For this reason communication is difficult: most of the better houses however have gardens surrounded by high walls through which communication can be extemporized; the gardens would also serve as a harbour for the defenders while the Artillery duel was going on. A perfect view of the interior of the villages can be obtained from the roofs of the churches, but these buildings should be used with caution.

To reconnoitre a village it is always necessary to walk round outside and observe the village from the enemy's point of view; after which disposition for its defence may be made, and the military capabilities of the village itself examined.

To defend a village in Malta it would be advisable to construct parapets on

Villages.

the flat roofs of the houses: to loophole the windows and prepare the garden walls for defence. For the outer line of defence strengthen the existing walls wherever you can obtain command over the ground in front. Open communications within the village and block the roads converging on it with obstacles such as wire entanglements, cactus etc. The reserve would be best placed in rear of the village.

Houses.

The houses in Malta are very solidly built with walls one, two and even three, or more feet thick, the layers of stones are always about a foot high so that the height of the house may be obtained by counting the layers. The houses have flat defensible roofs, connected inside by a staircase. The older houses have often been built for defensive purposes, having as a rule no windows near the ground, and where this rule is not adhered to, the windows look into a garden which is surrounded by a high defensible wall. The houses are well supplied with water, for that falling on the roof is conducted into tanks underneath the house and that from the adjacent roads or lanes is conducted into tanks for watering the garden. The walls are invariably too thick for loopholing but the upper windows would often be found useful for this purpose, and a parapet on the flat roof will not only give cover to the defenders, but will furnish plunging fire on the ground in the vicinity. The squared stones one so often sees would be very useful for this purpose. At the corners of the farm houses will be found holes through the stone work for tying up horses and cattle: the inhabitants will always be found hospitable and ready to help, but the care taking dog will, alas! be found to do his duty a little *too* well.

Roads.

A classification of roads is found in the conventional signs, the peculiarity of Malta roads is however that the greater number of them, although broad in parts, will not allow two convoys to pass throughout their whole length. It seems wise therefore to place all roads over 14' in one class, those under 14' on which convoys often cannot pass in the second class, and unmetalled cart-tracks and footpaths in the last class. The macadam here consists of limestone, it is very soft and works into holes, the holes fill with water which rots the macadam and they are thus worn deeper. The macadam is however put on very thick and thus the road is the more efficiently repaired. The best macadam for roads is basalt and granite, flints and lava work to dust, lime stone and sandstone are too soft and are dusty in dry weather and greasy in wet. The roads here are invariably enclosed by dry walls which confine the traffic to them. The walls could however often be removed on emergency. Roads as a rule lead pretty straight to their destination but detours are often necessary to avoid hills, quarries, escarpments, and harbours and bays on the sea shore. It may be noticed here that curves in roads always appear much greater than they really are, and a gradient appears greater if you are descending a hill to it. Gradients of more than 3° are seldom met with on first class roads and those over 8° are extremely rare on any roads at all, as extra horses are necessary to drag an ordinary load up such a slope. Non-Commissioned Officers should practice judging gradients.

Rivers.

The reconnaissance of a river presents most difficult strategical and large tactical problems, and is rather beyond our scope.

Streams.

There are no rivers in Malta but the dry water courses are liable to freshets and often become unpassable in winter.

Streams flowing across the front of a force presents a considerable obstacle and if flowing on the flank are a convenient protection. In reconnoitring a stream, the nature of its banks, the bottom, the depth of the water and the direction and strength of the current must be noted; weeds will show the usual direction of the current, and stones lying on the bed show that the bottom is sound. The approaches to the stream should be examined and all means of crossing such as bridges and fords reported on. Particular attention should be paid to hills, houses, woods and all features of tactical importance within rifle range.

Bridges.

Bridges are important as they are connected with the reconnaissance of rivers as well as roads. The object for which the bridge is constructed must be taken into consideration, the country in the vicinity, and the approaches on and off the bridge. The reconnoitrer may be called on to report on temporary bridges such as single and double lock, sling and suspension bridges, bridges of boats, rafts, pontoons, as well as permanent bridges made of masonry and iron. As regards the bridge itself, the breadth of roadway, length of the bridge, its nature, the wing walls, arches, bays, piers, and supports, parapet and even the coping are all important as is also the superstructure and the way it is drained.

Woods.

In the reconnaissance of a wood the nature, the density, the penetrability of the underwood, the size and shape of the wood, the communication within the wood and the suitability of the edge for defence should be particularly noticed.

Railways.

A Non-commissioned officer will often come across the Malta Railway and have to report on it; the gauge, the nature of the rails, and the manner in which they are fastened together and to the sleepers, the embankments, cuttings, tunnels, and rolling stock are all important as is also the place where the engines water, the tanks, and means of repairing engines, rolling stock, bridges, and line itself and the situation of the depôt where the surplus rolling stock is kept, and repairs are carried out.

Positions.

The reconnaissance of a position is the most important of all reconnaissances. Positions are taken up for some reason, or in connection with some scheme, or circumstances will oblige a commander to take up a position whether he wills it or no. We shall only deal with small positions near the roads that are suitable for companies or even sections, but the same rules apply. Such positions are very numerous and should invariably be reported on. For instance the Commander of a rear guard to a force retiring would have to defend every house, knoll or wall, in order to give the main body time to retire unmolested: similarly with an advanced guard all positions where the advanced guard can make a stand if attacked must be noted, and with flank guards all those that will protect the flank. The following are some of the points which must be taken into consideration in reporting on a position: whether it is suitable to the number available to defend it, whether there is a good field of view and fire, what obstacles already exist on the spot that can be made use of, and what obstacles can be obtained in the neighbourhood: whether the position can be turned or easily outflanked, whether there

is a safe line of retreat, and above all whether you can issue from it and assume the offensive.

Billets.

The worst billet is said to be better than the best camp; it is healthier, more comfortable and more economical. When within striking distance of the enemy it is usual to bivouac in the open, as you are then more ready for immediate action and less likely to be surprised. There are no grassy slopes in Malta except on the glacis of the fortifications, so troops are often camped in the fields, they are better than the rocky places as there is better holding ground for the tent pegs and they are softer to lie upon. It is better to camp on high ground and send for water, than to camp low down where water lies near the surface, woods are considered unhealthy to camp in and so are valleys where there is no free current by air. If you want to know if a place is healthy observe the inhabitants and especially the children. In hot countries such as Malta keep as dry as you can, and avoid sitting in wet clothes, as it is a certain prelude to fever. The villages in Malta are well adapted for billeting troops, they are very compact, you can keep your units together, and they can be easily divided into section-areas; the houses are well built and healthy, and there is plenty of water. In Tarxien alone there are 16 large houses each suitable to billet a company besides innumerable small houses that could billet 3 or 4 men each, or even more if the flat roofs were utilized.

Water.

The reconnoitrer cannot be too particular about the water he recommends, and he must look well where it comes from, as surface water, and that which has passed

Water.

through villages is bad, although it may appear to issue from the earth or out of a bank.

A man must have a gallon of drinking water a day and 2 or 3 gallons for washing. In barracks or standing camps it is usual to allow him 5 gallons, horses drink 10 gallons, camels 10, elephants 25. A horse drinks 3 times a day and takes 3 minutes about it.

To calculate the available water in a stream multiply the depth in feet, the breadth, and the distance the water flows in a second, multiply the product by $6\frac{2}{3}$ which is the number of gallons in a cubic foot of water, and the result will be the number of gallons of water produced by the stream in a second. There are no streams in Malta but there are plenty of aqueducts and the amount of water flowing from an aqueduct 4 inches broad 2 inches deep with a current of 4 ft per second would come to $\frac{4}{12} \times \frac{2}{12} \times 4$ feet $\times \frac{20}{3} =$ about $1\frac{1}{2}$ gallons a second, more than enough for a company in a minute or for the whole of the troops in Malta in a hour. The difficulty would be in arranging for the issue of it.

The best water in Malta is conducted in pipes from the hills between Benjemma and Dingli. In Valletta it is laid on in the houses and in the villages it is drawn from taps in the streets. A second class water is pumped up from the Armier pumping station near the head of the Marsa and supplies the houses in Valletta and the villages with water for washing.

There are also tanks in all the larger houses both in Valletta and in the villages filled with rain water from the roofs. Water is also obtained from wells, but in the low

Water.

lying ground like the Marsa it is generally brackish, and it must always be looked upon with some suspicions. There are many springs in the North Western side of the Island and the porous nature of the rock, and plentiful rain fall makes the supply of water inexhaustible, if sufficient wells and galleries are dug and there is the means of pumping the water up. To ascertain the depth of a well, drop a stone into it, and count the number of seconds it takes to reach the water; multiply the square of the time it takes by 16 and the product will be the depth of the well, or height of the cliff, as the case may be.

Reports.

Reports should be either verbal or written, the former is often the best as it can be rendered more quickly, the reporter can be questioned and it is therefore more likely to contain what is wanted. The sketch should be accurate, clear, and simple; and the report should be "to the point." Forms are useful but their utility depends very much upon knowing which headings to report under and which to leave alone.

*Course
Recommended
for N.C.
Officers.*

The following hints may be useful to Officers Superintending a course of field sketching and reconaissance.

The conventional signs must first be thoroughly learnt and mastered so that there should be no doubt as to the meaning of everything drawn on the sketch, and the next point is to learn the definitions used in Military Topography so that the report should be equally clear and intelligible. The next point would be the scale so that the reader should know the proportion the sketch bears to the actual ground it illustrates. The instructor will next determine

Course, etc.

what instruments he intends his men to work with. A simple board furnished with a ruler and a compass let into the wood is recommended and it could be used on the same principle as the plane table. All the surveying and sketching instruments described in the text book are good, the cavalry sketching case for rapid road sketching, the plane table for filling in a tract of country on surveyed points by intersection and resection, and the prismatic compass for detail where no great accuracy is required, are all good and can be used with advantage in Malta. Whichever is chosen should be thoroughly learnt and constantly practiced, for mere theory is useless in handling instruments.

Short lectures on the true and magnetic meridian, the means of determining the North both by night and day, the path of the sun and its position at different times of the day, and the various ways of determining distances, are always most instructive and interesting and should be given from time to time before the outdoor work commences. Map reading should also be practiced and the use of maps explained, and the tactical importance of the various features likely to be met with in the country pointed out.

The Non-Commissioned Officers should not commence the out of door work till they have learnt the rudiments indoors and should then content themselves with traversing a simple road; they should report on it with reference to some scheme such as the march of troops along it, dispositions and conduct of advanced guards, rear guards, flank guard, being most careful to observe all features

Course, etc. natural or artificial on or near the road which might affect the scheme.

Although we cannot expect to come up to the above ideal, yet by learning what we ought to observe and how we ought to report it and by following the text book and paying particular attention to the points mentioned in the Syllabus published in the command, we can get some way towards it.

The following schemes are suggested, but officers have doubtless thought of many others they would rather solve.

1. Traverse the straight road to Sliema and practice taking rectangular offsets and intersections.

2. Traverse the footpath from the position finding station St. Julians past Tal Mensia church to the Naxaro road with a view of posting piquets and sentries either (a) North or (b) South of it.

3. Traverse the footpath from Sliema to the cross-roads half way to Birchircara for outpost North or South of it.

4. Examine Giacobbo hill, and explain its advantages as an Artillery position connected with the defence of Tarxien from an attack from the direction of Bereddeb mill.

5. Traverse the road from Misida to Birchirchara for the march of an advanced guard in a defile.

6. Examine the direct road from Pietà to Misida for a flank guard to protect a march of the main body by the coast road.

7. Traverse the road from the bridge over the Railway on the Citta Vecchia road for the rear guard to a force retiring on Valletta.

Course, etc.

8. Traverse the Curmi, Zebbug road for outposts facing North towards Attard or South on the Marsa-Zebbug ravine.

9. Make use of the above ravine for practising attack and defence of a defile.

10. Defend the South side of Tarxien village against an attack from Bereddeb Mill.

11. The Country within the points Tarxien, Hompesch-Arch, Zeitun, Ashiak and Gudia is well adapted for easy reconnaissance and lends itself to schemes for the defence of houses positions, etc., whilst that South of Gudia is well adapted for patrolling as it is difficult and intricate and will practice Non-commissioned officers in finding their way.

12. The village of Tarxien is well adapted for a billeting scheme for two battalions and the ground round Sante Christus Church is suitable for a camp.

13. Examine the patrol path on the Victoria lines and explain its uses and advantages.

14. The following slopes may be useful in judging gradients.

Slope from straight Sliema road to the Quarantine Harbour at Jubilee bar.....	1°
Strada Zaccaria.....	1½°
From Floriana to Portes des Bombes.....	3°
Slope alongside the Opera House.....	3°
Hill from Spencers Monument towards the Marsa.....	4°
Hill on Sliema straight road near Sliema	5°
Steepest part of above.....	6°
Hill from Upper Sliema to St. Julians Bay	8°
Narrow street in Pietà.....	10°
The D.A.A.G. for instruction examines the	

Course, etc.

above ground, and lectures on the schemes that are adapted to it twice a year to all officers who desire to attend, so it should be familiar to all officers in the Command.

The inhabitants in the country districts will be found very civil and obliging and are generally ready to assist, but like all southern nations they are very excitable: they are very poor and depredations to their crops mean a great deal to them. Non-Commission Officers should use the roads and paths as much as possible and should be careful to go back when warned off, as a mans' land is just as much his property as his house or his money. The flat roofs of the houses are most useful for surveying, as the instruments can be set up on them, but it would be unwise for a Non-Commissioned Officer to enter a house or go on the roof without asking permission and having got permission he should stand quite on the edge of the roof. It is when crops are quite young, and the ground is wet that the greatest amount of harm is done in walking over them, and a very young crop looks to the novice like a fallow field. In any altercation with the inhabitants as regards trespass the senior of the party should endeavor to assess damages and if successful pay up at once and report the matter.



THE END.