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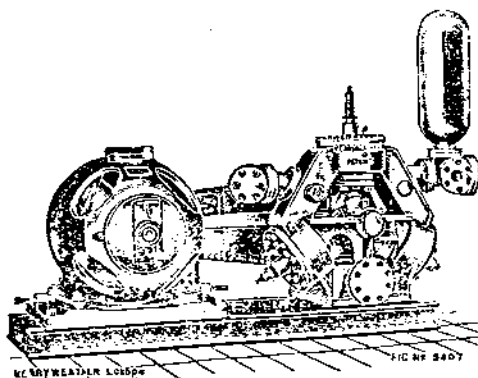
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FAMOUS ENGINEERS OF THE ALLIED ARMIES.

By COLONEL B. R. WARD.

LEMAN.

"Some men are born great," Shakespeare tells us, "some achieve greatness, and some have greatness thrust upon them." It may with some confidence be asserted that General Leman comes under all three categories. The physical, moral and intellectual equipment which he inherited from his ancestors formed a potential greatness which he converted into actual greatness by a long life of strenuous effort and devotion to duty. Lastly greatness was thrust upon him, owing to the fact that to him was allotted by fate, the post of honour as Defender of the gate of European civilization, against the first onrush of the German Armies, on the fateful 4th of August, 1914.

George Leman was born at Liège on the 8th of January, 1851. His father, a captain in the Artillery and professor at the Military School, was an officer of great promise. His premature death prevented the publication of some remarkable studies on mechanics and ballistics. He had, at one time, been offered the appointment of permanent examiner in mathematics to the Military School—a post occupied later on by his son—but he did not feel justified in accepting it.

After the death of her husband, Mdme. Leman devoted herself to the education of her two sons. The General always showed a profound veneration and love for his devoted mother, whose pride and joy in her brilliant son knew no bounds. As a schoolboy at Brussels, George Leman showed exceptional abilities, and gained many prizes. He passed first into the Cadet School, and came out first as a candidate for a commission at the end of the course of study. He was gazetted sub-lieutenant in the Engineers. Brilliant schoolboys and cadets do not invariably fulfil the promise of their school days, but young Leman soon showed that his abilities and character were solid as well as brilliant.

After a short tour of duty with his regiment, he made a speciality of mining engineering and was in consequence placed in charge of the construction of wharves at Charleroi where the foundations offered peculiar difficulties, in consequence of the many coal-mine galleries which traverse the bed of the Sambre at no great distance below the surface.

Leman tackled the job with audacity and decision—characteristics which he has displayed all through his life—and brought the work to a satisfactory conclusion.

At the age of 23, he was promoted to the rank of captain. On the 20th of May, 1880, he was appointed to the Staff of the Engineer Department, and shortly afterwards he was placed in charge of a technical committee at the War Office, where he soon displayed a remarkable aptitude in dealing with questions regarding applied science and the art of the engineer.

It was at this time that he was ordered to report on the stability of the Palais de Justice, at Brussels—a building then in course of construction—which was causing considerable anxiety. After a minute study of the question, he recommended the continuance of the work, a judgment which time has proved to have been well founded. His next appointment was that of Instructor in Military Art and Fortification at the Cadet School. Here he displayed so much mastery of his subject that he was ordered to reorganize the courses of construction, architecture, and geology.

The exceptional mathematical ability, sound judgment, and conscientious work that Leman displayed in carrying out this important task may be gauged by the fact that in 1887 he was promoted Knight of the Order of Leopold "for the talent displayed by him, in drawing up the course of construction."

In the same year he published a work on *Graphic Statics* and in 1895, *Lessons on the Resistance of Materials*, a monumental work which is still referred to as an authority on the subject.

In 1893, he was appointed permanent examiner in mathematics, and on his promotion to the rank of major on the 29th September, 1894, he was placed in supreme charge of the studies at the Military School, which he rapidly succeeded in bringing to a high state of efficiency with a reputation which attracted students from all over the world, from Japan, from Serbia, from Bulgaria, Roumania, and other countries.

Few men have ever exercised a greater influence over the education and character of an Officer Corps, than has General Leman over the officers of the Belgian Army.

His work at the Military School commenced on the 29th of December, 1880, when he was appointed Instructor in Construction, Military Art, and Field Fortifications, and he did not cease to discharge the functions of Commandant of the School, to which post he had been appointed on the 26th December, 1905, until the 28th January, 1914.

For more than 33 years, he had been occupied with the task of the education of Belgian officers, and the astonishingly brilliant manner in which the Belgian Army has risen to the height of its responsibilities during the last two years, is doubtless due in large measure to the exceptional character and influence of the indefatigable Commandant of the School.

He had been promoted lieutenant-colonel in 1898, colonel in 1902, major-general in 1907, and lieutenant-general on the 26th June, 1912.

During this period, he had been the recipient of no less than 16 decorations, including Spanish, Greek, Roumanian, Chinese, French and Prussian Orders.

As the Commandant of a Military School, and as an Instructor of Officers, his fame was world-wide.

He was now a lieutenant-general, and 61 years of age. It might therefore be reasonably thought that Leman's career was over, and that he would be remembered only as a distinguished Military Educator—one who had done for Belgium what (for instance) Sir Charles Pasley had done for England by the establishment of the School of Military Engineering at Chatham in 1812.

Fate was however reserving for Leman a rôle which should bring his name far more prominently to the notice of posterity, than could possibly have been the case had he been known only as the distinguished head of a Military School.

On the 20th February, 1913, while still holding the appointment of Commandant of the Military School, he was appointed a Member of the Council of National Defence and on the 29th of January, 1914, he was appointed Governor of Liège, and Commander of the 3rd Division of the Army.

The time was indeed short. The great cataclysm that was to convulse Europe was destined to burst in six months' time, but Leman lost no time in setting to work to organize the 3rd Division and the defence of the fortress.

The methods employed by Leman in his new command were those which he had made use of as Commandant of the Military School. The members of his staff were periodically summoned to a series of very early conferences, and found the General ready to start off, on horseback, to inspect the forts and to examine critically, the weak points of the defence. After a long day in the saddle, the conference was continued in the office, schemes of defence being discussed, and all the means for supplying deficiencies in buildings, ordnance stores, and supplies being thoroughly considered. Often these gatherings lasted into the small hours.

Disturbed in the ordinary routine of garrison life, it was small wonder that some officers complained of the superhuman energy of the new broom, but the majority, stirred by the example of the Chief, and realizing by contact with his remarkable personality, something of the lofty mission which it was their lot to be engaged upon, gave themselves whole-heartedly to their new life and duties. As for the remainder, they did not last long. The General, whose knowledge of men equalled his powers of organization, got rid of them with the same promptitude and decision that had been shown by him in the case of inefficient professors at the Military School. The 3rd Division was commanded with the same energy and decision.

It was not long before it was recognized at the Ministry of War at Brussels, that the reports emanating from Liège stood out as

models to be followed throughout the country, where a thorough military reorganization was the order of the day.

The proposals sent in by Leman were characterized by clearness, precision, and common sense. At the same time, they showed the highest ability and technical knowledge. The selection of General Leman for the command of the all-important frontier fortress of Liège had turned out to be a triumph for M. de Brocqueville, the far-seeing Belgian Minister of War.

It was not long after his appointment before Leman expressed a wish to see and to exhibit his Division on a war footing. In order to comply with this desire, a few months before the invasion, the 3rd Division was assembled at Beverloo Camp, fully mobilized, with transport complete. During the course of the manœuvres, which followed, the Division showed up so well in steadiness, discipline, and all-round endurance and efficiency that the King and the numerous officers who attended the manœuvres complimented it by giving it the title of the "Iron Division." The King warmly congratulated the General on the good results obtained by him in so short a time. Leman had indeed surpassed himself and had almost realized the impossible.

He had hardly been a week at Liège before he knew all the strong and weak points of the defence of the fortress. "This is where we shall be attacked," said he one day to an aide-de-camp as they were riding over the heights of Sart-Tilman. It was not long before his forecast was completely verified.

A month later his scheme of defence had been worked out and his Division had been reorganized as described above. After two years of campaigning the 3rd Division is still the crack Division of the Belgian Army. The title of the "Iron Division," gained by it at the historical peace manœuvres of Beverloo has been proved to have been justified by the supreme test of war.

All the credits demanded by the General were at once sanctioned by the Minister of War. All that could have been done in the short space of six months was done, in order to give the highest possible defensive value to the fortress which was destined to undergo the severest of all tests—the test to destruction—and history will surely accord a full meed of honour to the skilful and devoted engineer who had prepared so thoroughly and exhaustively for the coming of the storm.

Six months of energetic preparation were succeeded by a week of still more intense work, as General Leman recognized during the last days of July that war was inevitable. Thousands of civilians worked day and night on the subsidiary defences of the fortress. From Liège right up to the German frontier, all the bridges and tunnels were mined. Villas were razed to the ground and woods cut down wherever these obstacles interfered with the fire of the

forts or with the field of view from the intermediate trenches. All the cattle, sheep, corn and vegetables in the surrounding country were requisitioned for the use of the fortress. No food or forage which might assist the enemy was to be found in the villages round Liège. Such action was naturally not popular with the farming population. Some made fun of the General, others violently abused him. "What do I care for your attacks on me?" said he to a local magnate a day or two before mobilization was ordered: "Not a brass farthing. You say that there will be no war. Very well; let us assume that you are right. In that case, you will have me court-martialled. On the other hand, if I am right, you will go down on your knees to thank me."

As all the world now knows, it was General Lemane who was right, and every one of the Allied Nations in the Great War now raging, has the strongest reasons for gratitude to the fine old soldier.

The preliminary negotiations between Germany and Belgium in the early days of August, 1914, were of short duration. The reply given by King Albert to the German Kaiser was the very echo of the message sent two thousand years ago by the Athenians to the Persian General Mardonius, who had been sent by Xerxes to persuade them to betray the cause of Greece. "Attempt not," they said, "the vain task of talking us over into alliance with Xerxes. Tell Mardonius that as long as the sun shall continue in his present path, we will never contract alliance with Xerxes; we will encounter him in our own defence, putting our trust in the aid of those gods and heroes to whom he has shown no reverence, and whose houses and statues he has burnt. Come thou not to us again with similar propositions, nor persuade us even in the spirit of goodwill into unholy proceedings."

King Albert refused the right-of-way to Von Emmich who was playing the part of Mardonius, and on the 4th of August—the very day on which the Kaiser's troops crossed the Belgian frontier—the following proclamation was posted up in the streets of the old Walloon capital:—

"TO THE INHABITANTS OF LIÈGE.

"The powerful German Empire is invading our territory after an ultimatum which constitutes an outrage. The tiny Kingdom of Belgium has proudly taken up the gauntlet. The Army will do its duty. The population of Liège will do the same, and will continue to show an example of calmness and of respect to the law. I can count upon the patriotism of the people.

"Long live the King, Commander-in-Chief of the Army.

"Long live Belgium.

"The Lieutenant-General, Military Governor of Liège,

"LEMAN.

"Liège, 4th August."

At about 11 o'clock in the morning the heads of the German columns were crossing the Belgian frontier at Gemmenich. At the same time, the members of the Belgian Parliament were assembled in the Palace of the Nation at Brussels. M. de Brocqueville mounted the tribune, holding in his hand the dispatch announcing the tragic news. For some moments he spoke amid profound silence. His closing words were :—

“ We shall perhaps be conquered, we shall perhaps be crushed, but cowed, subjugated, never ! ”

The Statesman at Brussels and the Soldier at Liège had sounded the note of defiance to which all Europe has vibrated ever since. Shortly afterwards a battalion of the 12th Regiment of the Line was engaged with the leading German Advanced Guard at the bridge of Visé, and inflicted upon it considerable losses. The great European War had begun.

On the following day, the invaders distributed the following proclamation in all the country lying to the east of Liège :—

“ 5th August.

“ To my very great regret, German troops have been inevitably forced to cross the frontier, Belgian neutrality having been already violated by French officers who crossed the frontier under a disguise. Our greatest desire is to avoid a conflict between two peoples who have been friends hitherto and formerly Allies. Remember Waterloo, where German Armies contributed to found the independence of your country, but we must have free passage ; the destruction of tunnels, of bridges, of railways, will be considered hostile acts. I hope that the German Army of the Meuse will not be called upon to fight you. We require a free passage to fight those who wish to attack us. I guarantee that the Belgian population will not have to suffer the horrors of war ; we will pay for supplies, and our soldiers will show themselves the best friends of a people for whom we feel the highest esteem and the deepest sympathy. It depends on your wisdom and on your enlightened patriotism, whether or no you will spare your country the horrors of war.

“ The General Commanding the German Army of the Meuse,
“ VON EMMICH.”

If the ultimatum of the previous day was an outrage—as it was justly characterized by Leman in his stirring proclamation to the inhabitants of Liège—Von Emmich's proclamation of the 5th was an insult, and Leman answered it not with a word, but with a blow.

That night, at about midnight, the Germans having attacked in mass between Forts Barchon and d'Evegnée, were put to flight with heavy losses. General Bertrand at the head of the 11th Brigade

charged the enemy with the bayonet and temporarily relieved the situation. The relief, however, was of short duration. "There were too many of them," as the French grenadier said of Waterloo.

At about 5 o'clock in the morning of the 6th a determined raid was made on the headquarters of the 3rd Division. General Leman was working with his staff in the office in the Rue Sainte-Foix. A force of some 40 police were on duty, when suddenly shouts were heard of "The English! the English!" mingled with shouts, applause and a desultory fire of musketry.

The strangers were not, as the Belgians thought, the advance guard of French's Army, but a party of German officers, who came along in a motor car and were taken by the crowd for Englishmen. The two sentries in the street realized the situation and fired on the occupants of the car, but one of them was killed and the other mortally wounded, before two or three staff officers ran downstairs, revolver in hand, and a short struggle took place on the pavement. Major Marchand fired, killing a German officer, but was himself immediately shot dead. The General seized his revolver and was about to throw himself into the fray, when one of his staff seized him by the arm and hurried him off over the garden wall at the back of the house, made for the railway line and jumped into a truck which was man-handled along as far as the Palace Railway Station.

The attempt to kidnap the General had failed, but the pressure of an attack driven home with overwhelming numbers, over more than half of the perimeter of the fortress, proved irresistible.

A determined series of mass attacks carried out during the night of the 6th August was successful at several points and on the morning of the 7th several of the intervals between the forts had been forced by the enemy.

General Leman, weakened by a severe attack of fever and ague, gained with his staff the Fort of Loncin, and held a Council of War. It was decided that the forts should hold out to the last and should cover by their fire the retreat of the 3rd Division. This operation was successfully carried out, and on the following day, the following official decree was published in Paris:—

"OFFICIAL.

"7th August, 1914.

"MONSIEUR LE PRÉSIDENT,

"At the moment when Germany by deliberately violating the neutrality of Belgium as recognized by treaties, has not hesitated to invade Belgian territory, the town of Liège, called upon to encounter the first shock of the German troops, in an heroic struggle against overwhelming odds, has just succeeded in holding the Army of the invader in check.

"This splendid feat of arms constitutes for Belgium and for

the town of Liège an admirable title of glory : and it is fitting that the Government of the Republic should perpetuate the remembrance of this memorable deed, by conferring on the town of Liège the Cross of the Legion of Honour. I have therefore the honour to request that you will be so good as to affix your signature to the attached decree, approved by the Council of the Legion of Honour, thus intimating your approval of the investiture of the town of Liège with the Cross of the Legion of Honour.

“ The Minister of Foreign Affairs,
“ GASTON DOUMERGUE.

“ Article I.—The Cross of Knight Commander of the Legion of Honour is conferred upon the town of Liège.

“ Article II.—The Minister of Foreign Affairs and the Grand Chancellor of the Order are respectively charged with the execution of the present decree.

“ Signed in Paris on the 7th August, 1914.

“ R. POINCAIRÉ.”

The losses of the Belgian troops during the siege did not exceed 6,000 men. Forty-eight thousand German identity discs were picked up round the fortress, indicating a loss of some 70,000 killed, wounded and missing amongst the assailants.

It was not until the 16th of August, that the Fort of Loncin was battered into ruins and General Leman, stunned and asphyxiated, was taken prisoner without having surrendered.

The Forts of Liège designed and constructed by a great Belgian Engineer, General Brialmont, and defended to the last by another great Belgian Engineer, had fulfilled their purpose.

Within three weeks of the fall of Fort Loncin—thanks to the breathing space afforded him by the heroic defence of Liège—a third great Engineer officer, General Joffre, had launched on the 6th of September, his great counter-attack, over the ground where Attila and his Huns were driven back by Theodoric in 451 A.D. This great counter-stroke, completed on the 10th of September and destined to be known through future ages as the Battle of the Marne, proved conclusively that the Kaiser's dream of world domination was an unattainable ideal. The fall of Liège and the capture of Fort Loncin on the 16th August, were technically German victories, but in reality they were German defeats; for the price exacted in time by General Leman enabled the concentration of the British and French forces to be carried out on the 22nd of the month, and rendered possible a fortnight later General Joffre's great Victory of the Marne, which is now seen to have been one of the decisive battles of the world.

THE JUNCTION OF THE INDIAN AND RUSSIAN
TRIANGULATION WORK IN THE PAMIRS.

[FROM THE RECORDS OF THE SURVEY OF INDIA.]

(Continued).

NOTES ON THE GEOLOGY OF THE PAMIRS.

By LIEUT. (NOW CAPTAIN) K. MASON, R.E., and CAPT. R. W. G.
HINGSTON, I.M.S.

The first thing that strikes one on crossing the Mintaka Pass, is the sudden and marked change from sheer and rugged peaks and deep gorges to comparatively undulating hills and valleys. On either side of the Mintaka Valley, as one descends from the pass, the hills are composed of dark-coloured slates and shales now undergoing rapid denudation, and capped at their summits by a covering of permanent snow. The impression one receives is that the ice-covering has but in recent geological times left the lower slopes of these hills, as the side nalas can be seen in the very commencement of their formation, and are noticeable by the number of talus shoots, slipping down the mountain side. There is one large shoot which has reached such a size, and has extended so far across the valley, as to have completely diverted the stream from its original course. Looking down on this shoot from above, one is struck by the curious wave-like ripples of the surface, which give the idea of a *flow* and seem to indicate that the mass is creeping downwards.

In this valley, as all over the Taghdumbash, the extreme regularity of the way in which the country has been carved by glacial action is remarkable. Sir Thomas Holdich writes of the Sarikōl Range that "Glacial action has had the effect of wearing the buttresses of this range into an almost architecturally regular succession of gigantic square-cut spurs, each facing the plain with a broad triangular-shaped abutment and each pair in succession embracing a glacier."^{*}

This is true of the Northern Karakoram Range and its spurs. Glacial action could alone have produced this uniformity, and the comparative absence of the denuding effects of rain and rivers, which must have been in force since glaciation retreated, seems to indicate that this retreat is of a tolerably recent date. In fact, the whole Taghdumbash Pamir and its surrounding mountains appear to have been in modern geological times completely covered with an immense ice-cap somewhat similar to the Greenland and Spitzbergen of the present day. This ice-cap was the feeder of the huge

^{*} *Report on the Proceedings of the Pamir Boundary Commission, 1896,*
p. 39.

main glacier of the Karachukor or Tashkurghān River, and it has now retreated to the summits of the highest mountains.

Further evidence of glaciation exists all over the Pamir in the form of old moraines, some of which are enormous, and are composed mainly of faceted granite blocks varying in size from pebbles to huge boulders, and hidden under a scanty layer of soft alluvium which in places is covered with a thin saline efflorescence.

These moraines in places give an extraordinarily false impression. Close to the junction of the Kilik and Karachukor Rivers they appear in the form of a series of terraces rising one above another at regular intervals and reaching hundreds of feet up the mountain side. In one place we counted as many as 12 of these terraces, which at first appeared to be the ancient beds of the river before it had cut its course down to the present level. But on closer examination we were surprised to find that these terraces were composed to a large extent of huge granite boulders, polished and faceted, and showing no signs of having been *rolled* into their present position by water action, nor any regularity in their deposition. They are without doubt the products of glacial action and must have been left in the form of terraced moraines by an enormous glacier at regular intervals during its retreat.

One can conceive the whole valley filled with a large glacier and the hills bordering it covered with a glacial cap. Should a *permanent* change of climate occur, and it become warmer with a diminution of snowfall, the glacier would necessarily retreat. After the climatological cycle is complete, one can again conceive the glacier as tending to re-advance, but owing to the *permanent* change in climate, the *secular* advance is more or less balanced by the *permanent* tendency to retreat, and the glacier either remains stationary, or else slowly advances or retreats, leaving lateral and perhaps terminal moraines. After the period for advance of the glacier (during which it has remained practically stationary), the secular period of its retreat begins, and in this retreat it is again aided by the permanent change in climate; the glacier rapidly retreats leaving no moraine, until the semi-cycle of retreat is complete, when for a period the glacier again becomes practically stationary, and again deposits moraine. In this way, by a permanent general change of climate and a succession of secular variations of the glacier, these terraced moraines may be explained. And their remarkable regularity in size seems to indicate periodicity.

The great majority of peaks and ridges over 18,000 ft. are still ice-capped, and on the northern and eastern slopes this cap generally extends down in the form of a hanging glacier or field of *névé*, terminating in an impassable icefall, which in the distance gives it the appearance of clotted cream pouring over the lip of a jug.

Many of the hills, especially those spurs ascended on the northern

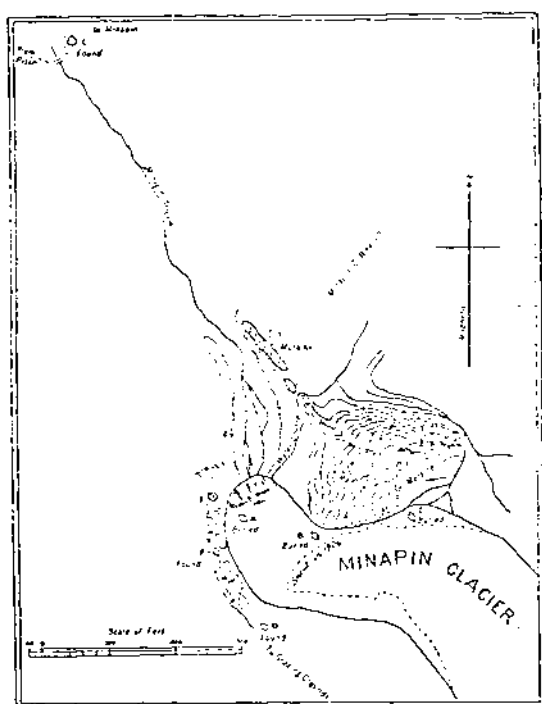
side of the Pamirs, were composed of granite, and it is probable that owing to the more direct nature of the sun's rays on the southward-facing slopes, the ice-covering was here removed earlier than on the northward-facing ones and that the denudation of the deposits here is practically complete.

Careful search was made for fossils amongst the shale, but none were found. The dip of the slates measured on Mintaka h.s. was 70° W.S.W., but this was by no means constant, and on Kilik East h.s. it would vary between 30° and 70° . It seems curious that these slates should have, on what appears to be the northern slopes of the granite range of the Northern Karakoram, a tendency to dip to the south, but the extreme irregularity of this dip may indicate that they have suffered from later compressions and contortions since the elevation of the range, or that the whole has been inverted to the N.E. This again would be a curious feature as most of the great anticlines of the south are inverted to the south.

EXAMINATION OF CERTAIN GLACIER SNOOTS OF HUNZA AND NAGAR.

By LIEUT. (NOW CAPTAIN) K. MASON, R.E.

The Minapin Glacier (Nagar). (Observed 20th May, 1913).—This glacier was observed by Mr. H. H. Hayden, Director of the Geological Survey of India in 1906, and his sketch map and report taken as the basis of observation. The new position is shown in sketch.



Sketch showing the Advance of the MINAPIN GLACIER between 1906 and 1913

As will be seen from this, the glacier has advanced about 700 ft. since 1906, and appears now to be heading due north, after having piled and banked up an immense pack of black ice, down which rocks are constantly falling. The snout now falls rapidly with a series of minor transverse crevasses and there are no surface streams.

As regards 1906 marks; A is buried by the advancing ice, and B and C are also covered. E, P, and D, were all found and made use of; a photograph was taken from E according to Mr. Hayden's suggestion for comparison with his.

There is no sign of any terminal moraine and it may be that the glacier is still advancing, or that the torrent is carrying away the débris. The upper part still agrees exactly with Mr. Hayden's description and its icefall remains in the same position, and appears to have very similar features.

A cross was cut at X (see sketch) above the snout on the left side and painted $\frac{X}{13}$ in black. Bearings to the snout:—from P, 24° ; from X, 61° ; from E, 158° . X is beside the same path leading to the summer grazing grounds mentioned by Mr. Hayden. The bearing from E to X is 163° . There were no signs of any of Mr. Hayden's cairns, which have probably been swept away by snow, but the paint had remained in fairly good condition. Mr. Hayden's marks were all repainted with black enamel.

*The Hassanabad Glacier (Hunza). (Observed 20th May, 1913).—*This glacier was also measured and marked by Mr. Hayden in 1906. On the 20th May, 1913, the snout appeared in practically the same position. Of Mr. Hayden's marks—"2" was easily visible on the granite-veined cliff east of the glacier and could be read through field glasses, from "3." The latter mark has apparently slipped some 50 ft. down the hillside and is now a little below the Garukin irrigation channel. A photograph was taken from here which gives a precisely similar position of the snout to Mr. Hayden's. Mr. Hayden's mark "1" has been carried away and lost down the slope. Station "3," described by Mr. Hayden as "near the last (most northerly) group of bushes" is now slightly incorrect, as a few more bushes have sprung up along the channel to the north. But the position of the boulder is fairly well known, and should serve as an excellent position for photographic comparisons at some future date. Mr. Hayden's marks "2" and "3" were repainted in black.

Mr. Hunter Workman visited the snout of this glacier in 1908, and found that the glacier had remained stationary since 1906, and it may be safely assumed that there has been no advance or retreat since that date.

THE SASAINI GLACIER.

Little Gijhal (Hunza). (Observed 25th May, 1913).—This glacier feeds the Hunza River from the west about $2\frac{1}{2}$ miles north of the village of Gulmit and just south of the village of Sasaini.

The snout approaches to within about 300 yards of the left bank of the Hunza River. There is a small ice-cave at the snout, and the ground is littered with massive blocks of black ice, much intermingled with boulders and debris. There are several moraines, impossible to distinguish from one another, and it is even impossible to say of many of them whether they are laterally or terminally formed.

At the present time the north side of the glacier (left bank) is banded up against a well-marked lateral moraine, and towards the village of Sasaini there are several old lateral moraines, which tend to show that the glacier at one time met the Hunza River further north than at the present time.

The inhabitants told me that this glacier has never been known to block the Hunza River, but that it is now slowly advancing; and that the snout annually varies to a certain extent laterally. Owing to the instability of this glacier, it was impossible to make any accurate observations or to mark any rocks, as all are moraine material in the neighbourhood of the snout.*

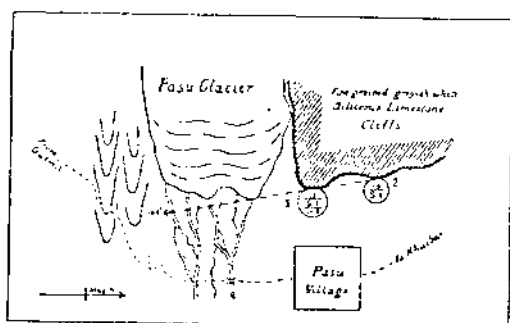
THE PASU GLACIER.

Little Gijhal (Hunza). (Observed 25th May, 1913).—At the top of the terrace on which is situated Baurit, one sees a long lateral moraine placed high on a solid foundation of cliff. This moraine must have been formed when the Pasu Glacier had advanced far into the Hunza River bed. Looking down from this moraine, there were two further lateral moraines visible on this side of the glacier, so it appears that the top one was laid down first, and that the glacier then suddenly retreated. It then appears that the glacier remained stationary while the second moraine was being formed and then retreated again. Another halt and another moraine was formed and this is above the present level of the glacier. It seems too that this glacier has retreated of recent years, for on the map it is shown as right across the Hunza River. But all absence of terminal moraine seems to argue that the glacier has retreated too fast for any bank to form.

Observations on 23rd August.—On August 23rd some further observations were made of the present position of the snout. Owing to the moraines on the south side it was considered inadvisable to put any marks on that side, but the limestone cliff on the northern

* This glacier varies so much that on our return visit late in August, many of the large blocks seen in May, had been carried down by the torrent which now rushed from a much larger ice-cave quite 50 ft. in height.

side offered a good place for marks. The sketch below is only rough and not drawn to scale, as there was no time to make an accurate survey. Two marks were painted in black on the cliff as sited roughly in the sketch, so that the line joining them and produced passes



Diagrammatic Plan of the Snout of the Pasu Glacier
23rd August 1913.
Not drawn to scale

through the foremost and northernmost of the two noses, the whole snout being cleft, as shown in the sketch. The lower one $\frac{13}{23.8}$ S.I. is

near the angle of the cliff, while the higher one, $\frac{13}{S.I.}$, above a talus fan, is some 100 yards further north on the cliff. The bearing of the indicating line was 145° .

The lumbaradar knows the marks and their purpose, and scouted the idea of the glacier ever advancing again sufficiently to do any harm, but gave us the following interesting information about the Batūra Glacier, some 2 or 3 miles north of Pasu.

Note on the Batūra Glacier.—About 40 years ago, the Batūra Glacier advanced and blocked the Hunza Valley, thereby causing a lake to form north of it. This finally burst its glacial dam, caused a flood and carried away part of the old village of Pasu. Near the edge of the river bed are still the remains of houses, and the whole of the bed corroborates this statement.* Opposite the snout of the Batūra Glacier are the remains on the left bank of the Hunza River of a continuation of the Batūra Moraine; but these we were only able to view through field-glasses from a distance. After the deluge the village of Pasu was placed further back.

* It is, however, possible that this appearance of glacial floods is caused by the damming of a glacier in the Shimshal or Shingshal River, which joins the Hunza River between the Batūra snout and Pasu. This periodically happens, the last case recorded being in July, 1906.—Vide *Frontier and Overseas Expeditions from India*, Vol. I., p. 10.

THE CHAPEL OF MILTON CHANTRY, GRAVESEND.

By MAJOR A. A. CROOKSHANK, R.E.

No doubt it is true of Gravesend as of other places that visitors often see and know more of a town than the inhabitants themselves do. Nevertheless some notes on the old Chapel of Milton Chantry may be of general interest, especially to those who are fond of the history, old buildings, and ancient architecture of this town.

The history of the Chantry and Chapel is well known and need only be briefly referred to. The old Chapel itself is however very little known, partly because it is on the forbidden ground of New Tavern Fort, but chiefly because it is completely cased in in thick brickwork. It is so well disguised that no passer-by would ever take the building on the right of the main entrance gate for a 600-year-old chapel, or suspect for a moment that the plain brick walls which meet his gaze conceal a 14th-century chapel and a quantity of beautiful carved stone work, and of fine chalk and flint masonry, some of it in perfect preservation. History, or rather historians (not by any means always identical) state that Milton Chantry originally covered a considerable extent of ground near the present New Tavern Fort.

The Chapel and Chantry were founded and endowed in about the year 1321—1322 by Aylmer de Vallence, Earl of Pembroke—a license having been granted by Edward II. in 1311 to Roger Orger of Milton. The Earl of Pembroke appointed one Master, one Priest and two Chaplains, and “granted that the priests should have an Altar in the Chapel of the Chantry, and a competent Burial Place for themselves.” The Bishop also ordained that there should be “burial places for the ecclesiastics of the institution and for no others whatsoever.”

The Chantry was well endowed and owned considerable lands and houses in Essex. It appears that it had a succession of Masters, though possibly not a continuous succession, from the date of its foundation till 200 years later, the last Master, John Dygon, dying in 1524. However, the Chantry is described one year previously, *i.e.* in 1523 (or nearly 400 years ago), as having been “brought to a state of ruin in appearance almost irreparable.” It had then been destitute of priests for some time. It is perhaps unnecessary to add that about the year 1534 the Chantry was suppressed at the Reformation.

In 1540 we read of the "Chapel called Milton Chapel together with the hall, pantry, kitchen, storehouse, chambers, etc., with their appurtenances, and the wharf, orchards, pond, two gardens and two closes of land." The Chapel seems therefore to have rapidly recovered from the state of "irreparable ruin" described as existing in 1523 or 17 years earlier. Another gap, of 250 years this time, now occurs in the history of the Chantry, except that in 1697 "a tenement included in the premises (of the Chantry) was converted into a public-house or tavern" (New Tavern).

The next record is dated 1776 and states "Nothing now remains but the Chapel part, which is built of flints and ragstones, but the window frames and mullions with stone mouldings at the west end. . . . All the other parts of this Chantry are now destroyed." (A similar statement is recorded for 1778). "The upper part of the Chapel is converted into lodging rooms. There is still remaining the receptacle for holy water, but the large Gothic window at the East end of the Chapel is now concealed by a brick building erected against it."

In 1778 New Tavern Fort was built, and in 1779 we read that "alterations were made." In 1779—1780 the premises were purchased by the Crown. By 1788 "the Chapel had been added to a large Inn, built by Mr. James Leigh Joynes and called 'The New Tavern'" (the name used in 1697 being continued). This change from chapel to inn, or tabernacle to tavern, or God's house to public house, was celebrated at the time in a poem of which two lines ran—

"Where there was grace without meat,
Now there is meat without grace."

The next record is that in August, 1842, when arrangements were being made for the reception of troops arriving from abroad "some partitions were removed, and the interior of the ancient Chapel was laid open." The history thus shows that the Chapel was in ruins in 1523 and was repaired in the Tudor period, as it was flourishing in 1540. In 1776 it was again in ruins, and was repaired and cased in with brick in 1780. It is a pity that the gap of 236 years from 1540 to 1776 cannot be filled up, also that it is not known what the building was like before it fell into ruins in 1540, and again in 1776, or in other words what the building was like firstly when originally built in 1322, secondly when repaired just previous to 1540 (say 1534—1540) and thirdly when rebuilt in 1780.

On first thoughts one might be inclined to find fault with the builders of New Tavern Fort in 1778—1780 as vandals or iconoclasts for concealing and covering up the remains of the old Chapel with brickwork and plaster; instead of this every lover of the antique ought to be deeply grateful to them for having preserved for future generations the beautiful carved stonework and the fine flint and

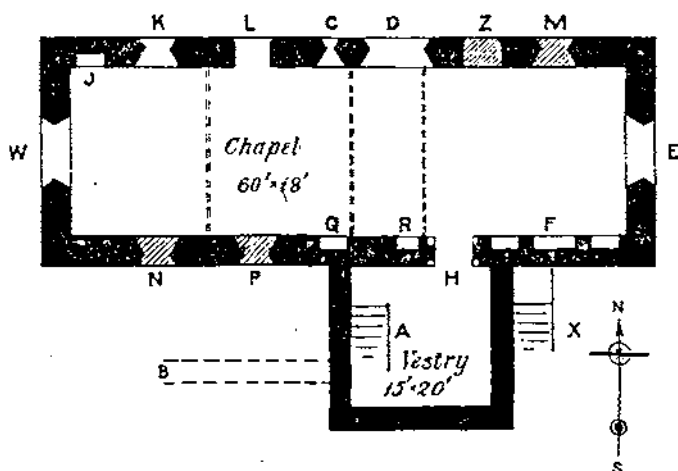
chalk walls which can be admired to-day, although these builders no doubt intended the old work to be buried and not seen again. Most architects in those days, when there were very few archæologists about, would have razed the old walls to the ground and built up an entirely new structure of a different ground plan and having little or no connection with the old.

The Chapel, like most old buildings, underwent alterations from time to time in the course of its long life; it consequently has examples of various periods of architecture, firstly of the early thirteen hundreds (Early English and Early Decorated), secondly the fifteen hundreds, thirdly the sixteen hundreds (Tudor and Perpendicular), fourthly Jacobean and fifthly late seventeen hundreds (Georgian).

It is hoped that a description or drawings of the Chapel may be found among the records of one of the dioceses; as, until these have been examined and carefully compared with accurate plans of the existing walls it is only possible to guess at the arrangement of the building at various periods.

I. THE EARLY ENGLISH AND EARLY DECORATED PERIOD.

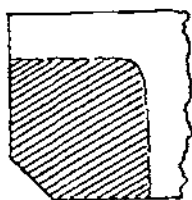
The original Chapel, of 1322, consisted of a rectangular building measuring inside about 60 by 18 ft. From the centre of the south side projected a small vestry (see rough *Sketch I.*). There may have been other rooms as well such as quarters for the "Master, one Priest and two Chaplains," a refectory and a cellar, as there are steps at (A) leading to an underground passage or chamber at (B), but the latter may be of some later period; it probably existed in 1540, when we read of the "hall, pantry, kitchen, storehouse, chambers, etc., with their appurtenances."



SKETCH I.

The Chapel had an entrance door, with a large window above it, in the west gable end, and a large window in the east gable end and both these windows have equilateral pointed stone arches, the east window, and probably the west also having mullions in the Early Decorated style and stained glass. In the east window the outer archway with quoins and sill is complete, the inner nearly so; in the west window the inner is complete.

In the north wall there is a narrow lancet window at (C) (of which both outer and inner quoins and the outer sill are complete), and a larger and very high window at (D) (of which both outer quoins and parts of the inner quoin on the east side remain). Both of these are in the Early English style and have stained glass; there is also a door at (L) with a flattened (*i.e.* not equilateral) Early English arch. The quoin on the west side, and the west half of the archway still remain, the latter being in good preservation (see *Sketch II.*, showing



SKETCH II.

section of arch stone). This second door is rather unusual in so small a chapel; but it may have been used as a private entry by the people who lived within the Chantry enclosure and Chantry grounds, while the west entrance, presumably on the public road, was for the use of the public. The second door (in the north wall) may not have been in the 1322 design, *i.e.* it may have been added later. "The receptacle for holy water" mentioned as still existing in 1776 was probably at (J) where there is now a semicircular modern recess made in brick.

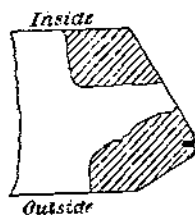
In the south wall there are three recesses at the east end. The centre and largest one is about 8 ft. wide and probably contained the tombstone and recumbent statue of the founder, the Earl of Pembroke. It is to be remembered that the Bishop ordained that there was to be "an altar in the Chapel" (possibly at (D) and "a competent burial place for the ecclesiastics of the Institution." The other two recesses, the east one of which is 2 ft., the west one 5 ft. wide, which are much smaller, may have held busts or brass or marble tablets of Masters, Priests or Chaplains of the Chantry or statuettes of saints. The Chapel was dedicated to the Virgin Mary and to the Apostles St. Peter and St. Paul. Two of these recesses have remains of their stone quoins—in the centre on both of the sides and portions of the corbelled sill remain—and in the west

recess both the sides. There is also a fourth recess at (R), about 2 ft. wide.

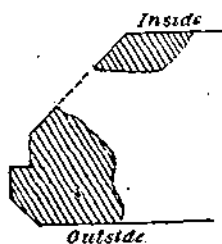
Just west of the group of three recesses in the south wall is the priests' door leading into the Chapel from the vestry. The inner arch (pointed equilateral) and both outer and inner quoins are complete.

There may also have been in the north wall, windows at (K) and (M), and a door at (Z); in the south wall windows at (N) and (P), and a recess at (Q), but these are all doubtful.

The stone quoins are made of Kentish ragstone, which is still, 600 years later, extensively quarried in the Medway Valley below Maidstone. In all the above-mentioned openings the stone quoins are similar, viz., in the Early English style (see *Sketch III.*, which shows the dressed stonework in the east and west windows and in the large window at (D) in the north wall). The quoins in the lancet window at (C) are as in *Sketch IV.* The recesses in the south wall

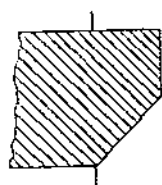


SKETCH III.



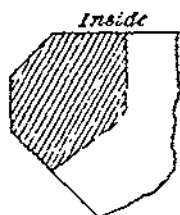
SKETCH IV.

at (F) have, of course, only the moulding (A) which the door (L) also has; of this the west side of the door on the inner side remains. The corbelled stone sill of the large centre recess, previously mentioned, is as in *Sketch V.*

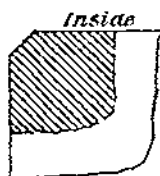


SKETCH V.

The stones in the arch rings of the east and west windows are as in *Sketch VI.*, and of the door (L) in the north wall as in *Sketch VII.*

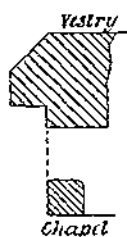


SKETCH VI.



SKETCH VII.

The stonework in the priest's entry is as in *Sketch VIII*. The iron brackets for the door hinges still remain.



SKETCH VIII.

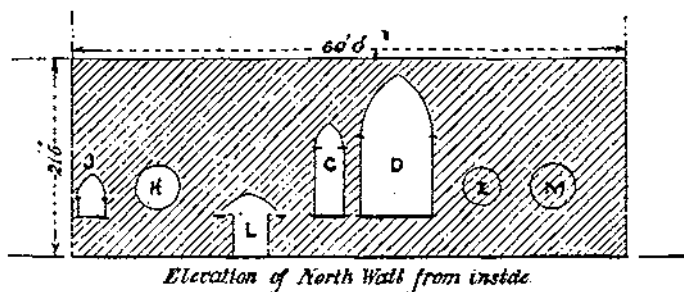
The walls of the Chapel were made of coursed chalk masonry faced on the outside with flint.

This flint work can be seen in its original condition in the east wall, the whole of which is intact and in a perfect state of preservation owing to a building having been added to the east end of the Chapel. There is also flint work in places in the north and west walls behind the brick facing. Of the chalk work there are beautiful examples in the arches of the east and west windows. Nearly the whole of the east wall (inside, all except a small portion of the face work on the north side which has apparently been intentionally cut away) is intact, in its original condition and in a perfect state of preservation, the upper portion being especially fine work. The chalkwork can also be seen in the lower half of the north, south and west walls—elsewhere the original materials have been used promiscuously to rebuild the walls.

As regards the carved stonework the gem of the collection is undoubtedly the priest's entry door—it is a real work of art, beautifully proportioned and in perfect preservation; the same may be said for the inner arch rings of the east and west windows, especially the former, a beautiful equilateral Early English arch. All this stonework is so perfect that it looks quite new just as if it had only left the mason's hands yesterday. Unfortunately the outer arch rings of both east and west windows have gone.

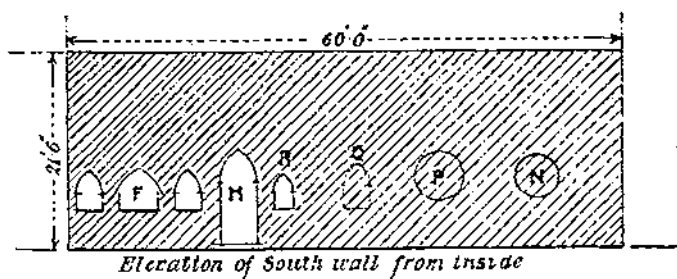
There is also carved stonework, though not with quite such perfect faces and arrises as the above, in the door at (L), the narrow lancet window at C, the high window at (D) and the recesses at (F). The centre one (8 ft. wide) has both sides and sill, the west one of the three has sides only.

The north and south walls are as in *Sketches IX. and X.*, that is, as far as it is possible to reconstruct them from the evidence of existing masonry; there probably were more recesses or windows in the south wall at (N) and (P) west of recess (Q) and in the north wall at



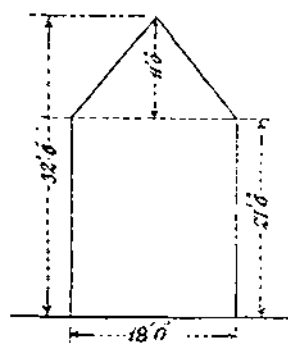
SKETCH IX.

(Z) and (M) east of (D), and at (K) between recess (J) and door (L). It is certainly remarkable that the two windows (C) and (D) should be so close together, (D) being an unusually large one. The absence of

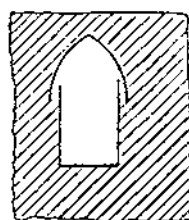


SKETCH X.

lights in the south wall would make the building rather dark, but in those days light was not wanted and chapels were intentionally made dark, the large east and west windows being considered sufficient. As regards the gable ends (see *Sketch XI.*), the east gable had one large three-light window, and the west gable the main entrance door (for the public) with the large window above it. The inner arch ring in the latter is not continuous with the quoins as in the east wall (see *Sketch XII.*, of west gable) no doubt in order to make the



SKETCH XI.



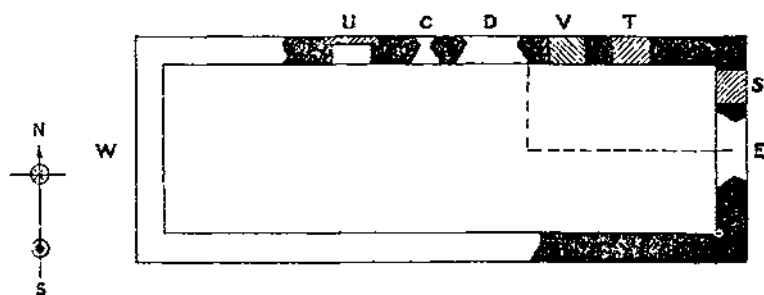
SKETCH XII.

width of the window match that of the door, whereas the east window, facing the congregation, would be made the great decorative feature of the building and would have the widest opening, the finest carving, tracery and stained glass.

All four walls of the building are 3 ft. 3 in. thick.

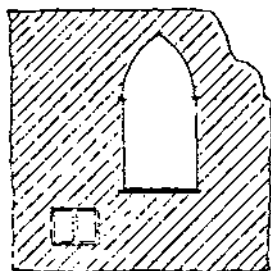
II. THE PERPENDICULAR PERIOD.

After 1534, when the Chantry was suppressed at the Reformation, the building was presumably used for secular and domestic purposes, and apparently a dividing wall was added and each half broken up into two or more stories. The first addition, probably made in about 1540, was a small rectangular window at (S) (see *Sketch XIII.*); it had



SKETCH XIII.

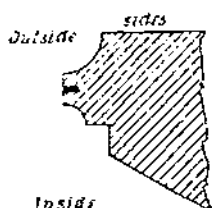
two lights and stained or leaded glass. It is very curiously placed with reference to the east window (see *Sketch XIV.*). The mouldings



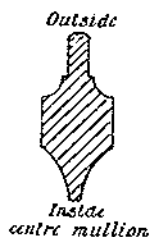
Elevation of East gable wall from inside

SKETCH XIV.

(see *Sketch XV.*) are complete and in fair preservation; the design of the central mullion being rather unusual (see *Sketch XVI.*).



SKETCH XV.



SKETCH XVI.

The next additions probably made about 1640 consisted of (1) another rectangular two-light window at (T). The moulding (see *Sketch XVII.*) is quite different to that in the window at (S). Only the west side and portions of the lintel and sill remain; the centre mullion and east side are gone. This moulding is in its original condition and in a perfect state of preservation owing to its having been sandwiched between two brick walls, *i.e.*, protected by a thick brick wall on either side.

This window and the earlier one at (S) would not have been required unless a floor had been put in above and the east window blocked up. Perhaps the N.E. corner was partitioned off into a separate little room (see *Sketch XIII.*) with a door at (V).

(2). A door at (U). This door probably had a flat Tudor arch (see arch stone in the Museum). The inside arch, as already explained, was a flattened Early English one. Of this 1640 period doorway the west side only remains, but the moulding (see *Sketch XVIII.*) is in perfect preservation owing to its having been protected by a brick wall outside it.

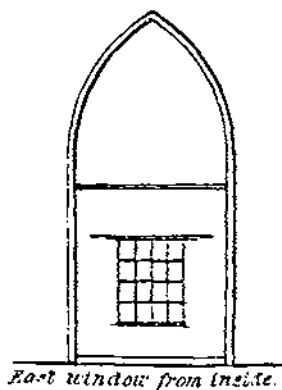


SKETCH XVII.

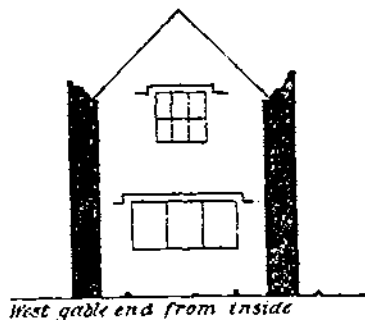


SKETCH XVIII.

As regards the other domestic Tudor work the gable ends in 1776 were as in *Sketches XIX.* and *XX.* (see Pocock's *Gravesend*).



SKETCH XIX.



SKETCH XX.

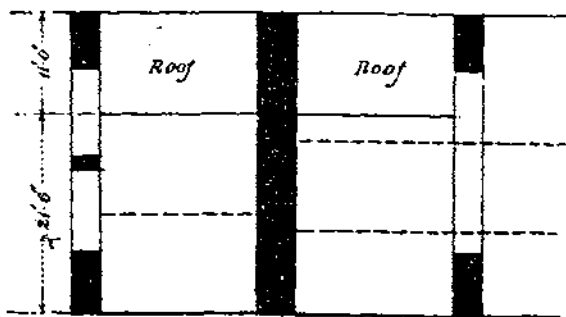
III. THE JACOBEOAN PERIOD.

The only remains in the Jacobean style are a staircase, handrail and four newels all of carved oak at (X) (see *Sketch*, page 201), and some carved oak roof trusses in the roof above the priest's door at H, *i.e.* in the roof of the vestry.

IV. THE GEORGIAN PERIOD.

In the 1780 period, when New Tavern Fort was built, the north, south and west walls were faced with 13½ in. of brickwork, the east wall having already had a building added to it. The old walls, where deficient, were made up to the original thickness of 3 ft. 3 in. with the old materials, the chalk and flint being mixed in patches. In some places (*e.g.* upper part of north wall) the flint was put on the inside. When the old materials were used up the walls were completed with brick. This patchwork is especially noticeable in the west gable end (inside) and in the upper parts of the north and south walls.

The building was made into two portions by building across it a thick brick wall carrying chimney flues in it; the east half, with the building to the east of it, was made into three stories, or rather two floors and one roof attic; the west half into two stories, access being by the stairs at (X) (see *Sketch*, page 201) and the whole was roofed over (see *Sketch* XXI.). This roofing (which remained for many



SKETCH XXI.

years concealed behind a lathe and plaster ceiling) with its heavy roof trusses (see *Sketch* XXII.) of oak and chestnut, placed close together,



SKETCH XXII.

is a very handsome and striking feature of the building. The roof is covered on the outside with small terracotta-coloured tiles. In the ground floor there is an interesting collection of carved stonework. These are the odd pieces which were found lying about or which were used in 1780 as filling only, the most beautiful being fragments of the decorated mullions out of the east and west windows, and the most interesting being a very large stone, half of a heavy Tudor arch ring, possibly out of the door at L.

These few rough notes on this interesting and, in parts, beautiful old building will have served their purpose if they result in local interest being awakened, in further research being undertaken into the history and architecture of the Chapel and in new discoveries being made.

NOTICE OF MAGAZINE.

REVUE MILITAIRE SUISSE.

No. 8.—August, 1916.

THE BATTLE OF THE MARNE.

The writer of the *Revue* article recalls the anxiety caused in September, 1914, to the friends of France when they learnt that a German army had crossed the Franco-Belgian frontier and was marching triumphantly southward towards the Marne. Naturally, the friends of Germany looked forward, at the same time, with glee to the prospect of the triumphal entry into Paris of their Kaiser, an entry which they expected would certainly take place within a few days.

Suddenly a great change came over the scene. From the 6th to the 9th September there was desperate fighting along the line of the Marne, from Meaux to the vicinity of Verdun. During the next six days the German Army fell back on to the line of the Aisne. Since then the hostile armies have ranged themselves, from the Swiss frontier to the North Sea, in entrenched positions facing one another and have remained almost stationary. Both sides were reluctant to give away information concerning the situation in their first communiqués. The Germans only admitted a partial check. The French contented themselves with the announcement of figures relating to the prisoners captured and booty taken.

The German Staff emboldened by the modest nature of the claims put forward by their opponents endeavoured to persuade neutrals and their own people that the Battle of the Marne was only a feint. By degrees the French Press and the public came to regard this battle as a great Allied victory and to speak of it as such.

In the absence of reliable documentary evidence regarding the events referred to, it has been difficult for neutrals to form an impartial opinion on the matter. However, recently literature dealing with this memorable battle has begun to make its appearance. Attention is called to the following pamphlets which deal with the events on the Marne:—

De Liège à la Marne, by Pierre Dauzet (published by Lavauzelle, Paris, 1915, at 2 fr. 50 c.).

La bataille de la Marne, by Gustave Babin (published by Plon Nourrit & Cie., Paris, 1915, at 2 fr.).

La guerre sur le front occidental, 1914—1915, by Joseph Reniach (published by Charpentier, Paris, 1916, at 3 fr. 50).

Von der Marneschlacht bis zum Fall Antwerpens, by Anton Fendrich (published by Franck, Stuttgart, 1916, at 1 mk.).

Die Schlachten an der Marne (published by Mittler & Sohn, Berlin, 1916). The author is anonymous; export of the work has been forbidden.

There is so little disagreement, it is said, between the French and German accounts in these publications that it may be assumed that the story told cannot be far removed from the truth.

The *Revue* article is written not with the object of describing the battle, but rather for the purpose of analyzing the results obtained therefrom.

Of the pamphlets referred to above the last mentioned has an official ring about it and is probably intended to represent the views which the authorities in Berlin wish the public to take regarding the causes and effects of the battle.

Berlin appears now to have abandoned the attempt it once made to have people believe that *only German Advanced Guards* proceeded as far south as the Marne, as was artlessly suggested in the first accounts of the fighting in this region. There is now no doubt that the main bodies of the I., II., III. and IV. German Armies and "some of the Army Corps" of the V. German Army took part in this battle and were thrown back on to the Aisne.

The question which has to be answered is whether the Battle of the Marne was a German check or a French victory!

There is now no doubt that the extent of territory regained and the prisoners and booty captured were nothing very remarkable.

Monsieur Dauzet in his account says: "We took some colours, 160 guns, some machine guns, shells (?), a million rounds of S.A.A., *some thousands of prisoners.*"

It is pointed out that the capture of 160 guns was not after all anything excessive, in view of the fact that each side had many thousands of guns in action. Moreover this figure has never been confirmed officially. Again no precise information has ever been published as to the actual number of prisoners taken; this tends to prove that the numbers cannot have been really large.

In the German accounts an attempt is made to prove that the battle was not lost, but that the German Higher Command, after four days of successful fighting, broke off the engagement to suit its own purpose, and drew back the German Armies in order to occupy defensive positions. The anonymous author of the last mentioned pamphlet gives an outline of the battle and puts forward the following theory (taken from the preface to the work):—

"The great events which took place from the 6th to 12th September, 1914, to the south and west of the Marne, between Verdun and the east of Paris, have been magnified by our adversaries, and some neutrals, into a brilliant success, which is a cause of boasting even to-day and on it they base their hopes of final victory.

"The time has now arrived to let in the daylight on these great operations, so that evidence from German as well as French and British sources may be examined and the fact demonstrated that the German armies, during the first four days of this gigantic struggle, were unquestionably winning at all points of the front. It was alone for strategical reasons

that they (*i.e.* the German armies) broke off the battle in order to take up new positions, which have remained practically unchanged for a period of 17 months. During this period an enormous wastage of British and French forces has taken place."

The writer of the *Revue* article makes an examination of the claim set out above, basing his remarks on the text of the German account contained in the anonymous pamphlet.

To make the situation clear it is necessary to understand what was the plan of campaign adopted by the German Great General Staff. Fortunately, it is set out in the German pamphlet now in question and is stated in the following terms :—"The German Higher Command had decided to push forward the main part of the German forces to the west as a first step and to confide the defence of the eastern frontier to a small number of Army Corps. It was hoped that the latter, in co-operation with the Austro-Hungarian, would be able to hold up the advance of the Muscovite Colossus for several weeks. This would gain the time necessary for the new formations, and above all the active and reserve Army Corps, which would then be available in the French theatre for transfer for the purposes of an offensive in the eastern theatre also."

"It was not intended, however, to wage an offensive war along the whole western front simultaneously. The Great General Staff had decided to remain on the defensive from the Swiss frontier to Donon, and only to pass to the offensive between Donon and Verdun, should circumstances permit; the principal task of the German troops on this front was to hold the forces opposed to them. Between Thionville and Aix-la-Chapelle, on the other hand, it was intended that the main body of the German forces in the western theatre should invade France, advancing through Luxemburg and Belgium for the purpose. In carrying out this advance, the German Army was to attempt to extend its right wing further and further westward with the object of gaining the seaboard.

"It was hoped, by a gradual wheel to the right, through Brussels, Valenciennes, Compiègne and Meaux, leaving Paris on the German right, to push back the French Armies successively to the lines of the Meuse, of the Aisne, of the Marne, perhaps even of the Seine, in order eventually to outflank them to the south of Fontainebleau and to envelope completely the whole French battle front."

"In this interval, other troops, principally Reserve and Landwehr Army Corps, were expected to reach the coast between Dunkirk and Calais, in order to prevent the disembarkation of fresh British reinforcements."

"The execution of the above plan would, in all human probability, it was expected, be completed by the end of September, and by this time a large number of Army Corps, having become available, would have been massed against the Russians."

"If the objects aimed at were not attained at once, this was not because the plan was faulty, still less because the German Armies had been defeated by the French, but for the reasons which are set out in detail following the description of the Battle of the Marne."

It is pointed out in the first place that the anonymous author gives no indication of the source from which he has obtained the above information. On the other hand, he writes with such assurance that there is reason to believe that his information has been derived from a reliable source. Consequently, the plan of campaign set out above is probably really the one adopted by the German Great General Staff.

In France, at one time it was believed that von Kluck's Army was marching on Paris and that it unexpectedly and suddenly had to change direction on the 3rd or 4th September, in order to strike the Allies on the Marne east of Paris. It would seem that the rôle assigned to von Kluck was from the first that of outflanking the French Army, but it would seem that he paid too little attention to the existence of the fortress of Paris.

Nothing could be more logical than the German plan of first beating the French and then turning on to the Russians. To turn the French left, instead of knocking their heads against the eastern ramparts of France, was also good strategy on the part of the Germans, provided only that the French would allow their left to be turned. Events have proved that there was a serious defect in the German plan, sufficient allowance was not made for the use to which the French would turn their excellent railway system. The German fundamental plan worked excellently in 1814, and again in 1870, but it failed in 1914. The Germans were thwarted by reason of the cleverness with which the French made use of their railways to transport whole Army Corps from their right to their left wing during the critical days of 1914.

The Germans have, of course, also made admirable use of their own railways to move troops from one theatre to another at a great distance away. It is, therefore, remarkable that they should not have given their enemy credit for being able to do likewise.

If it is admitted that the German original plan of campaign failed it would be reasonable to assume that faults were committed in its execution. But our anonymous author will not allow any such thing. This is what he says:—

"What were the reasons which prompted von Moltke (on the evening of 9th September) to draw back the German battle northwards for a distance equivalent to a day's march?"

"(1). The armies of the German right wing and centre were *very exhausted* by forced marches and continuous fighting. They had lost a large proportion of their strength and of their fighting value.

"(2). By reason of the rapidity of the advance, the *supply services* (food and munitions) *were not working* as well as it was hoped they would do.

"(3). The Germans had reckoned on a more rapid reduction of the fortresses of *Liège, Namur and Maubeuge* than events proved possible.

"The resistance of these places gave the French Commander-in-Chief the time necessary to organize his defensive measures on the Marne. Moreover, several Army Corps, detailed for the siege of the places named, were not able to reach the Marne in time to take part in the battle in full strength.

" (4). *The energetic sortie of the Antwerp garrison*, which took place simultaneously with the French counter-offensive on the Marne, held up certain German Army Corps, particularly the IX. and part of III. Reserve Army Corps. Had these corps been present on the Marne they would have been sufficient alone definitely to defeat the French Army and to crumple up the whole of the enemy's line of battle, already badly shaken at its centre.

" (5). And this was the essential reason : *It has now been irrefutably ascertained that the Russian Government was already determined on war in the spring of 1914 for the mobilization of its army had already begun at that time.* According to those competent to form an opinion on the subject, even some on the side of the Entente, the Russians would not, having regard of their methods of mobilization and the immense distances to be covered, be in a position to take the offensive until mid-September. However, the Russian offensive began in the latter half of August, not only against East Prussia but also against Austro-Hungary. Moreover, the Russians brought into the field a larger number of Army Corps than had been anticipated. It had been presumed that they would be compelled to leave the Siberian Army Corps in observation to meet a possible move on the part of Japan, the 22nd Army Corps in observation to meet a possible move on the part of Sweden, the Army Corps in the Caucasus to deal with Turkey and several others as police to repress internal risings.

" The Germans succeeded, it is true, in driving out the Russians from East Prussia at the end of August. On the other hand, the Austrians attacked by the Russian main forces, were not able, in spite of the real successes gained by them at the beginning to stand up against the big 'push.' This is why it became necessary, at the end of August, before the deployment of the German armies against France could be completed, to transfer troops to the eastern theatre. In a communiqué of the 14th September the French Higher Command had recognized that between the 28th August and 7th September the Germans had already begun to move troops from the western to the eastern theatre. It is a fact that at the end of August a few Army Corps were moved from the Western Front and parts of Germany to the Eastern Front.

" In spite of the great military genius of General Joffre, who had recognized the dangers of the situation and taken suitable measures to cope with them, the Battle of the Marne would have been a decisive victory for the Germans, without any unfortunate incidents, *had not the Russian Government already begun to mobilize the Russian Army in the spring of 1914.*

" Even according to French reports, worthy as they are of the highest credence, the Battle of the Marne cannot be regarded as a German defeat. It is rather the case of a *battle broken off by the Germans for tactical reasons*, owing to circumstances supervening which have nothing whatever to do with the battle itself.

" If a study be made of the events during the four great days of battle, from the 6th to 9th September, it will be observed that the Germans had all the advantages on their side almost in every respect ; the

extreme right (von Kluck) and the centre (von Hausen) caused their adversaries to suffer a serious and uninterrupted check.

"As to material results, it can be proved that the Germans captured a larger number of prisoners and guns than did the French."

The foregoing extract causes the writer of the *Revue* article to exclaim, Oh!!!

And the latter continues: "Then, it is neither the French nor the Germans who have won the Battle of the Marne, but those knaves, the Russians, who had been making their preparation for this purpose from the time of the melting of the snows.

"Further, no one lost the battle, except perhaps those good-for-nothing Austrians who allowed the enemy to occupy Lemberg, at a time when the soldiers of William the Great were in the act of crossing the Marne as conquering heroes."

If the German Great General Staff wish to convince neutrals of their good faith they are recommended to try a different line of argument and to choose a catchword which is likely to confuse strategical and tactical issues less clumsily.

It is said that, apart from a few sarcastic references to the British Army, the tone of the anonymous pamphlet is in good enough taste.

The writer of the *Revue* article states that he does not quarrel with the reasons which, it is alleged, were the cause of the Germans discontinuing the battle, but he does not accept the reasons given at the value put upon them.

The question is asked: "If it can be proved that Russia was mobilizing in the spring, is it claimed that the German Intelligence Department was so badly informed that it only realized the true situation whilst the Battle of the Marne was in progress?"

The entry of the Russians into Lemberg, on the 5th September certainly gave cause for anxiety, but it could not possibly be a real ground for the Germans to break off, on the evening of the 9th September, a decisive battle, which they were on the point of winning. On the contrary, the Germans, by completing their victory on the western front, would have been in a better position to face the Russians in accordance with the original plan of campaign.

According to the writer of the *Revue* article the real reason for the German retreat lay in the fact that *the German Army Corps in the fighting line were worn out, they had nothing behind them, neither supplies nor reinforcements.*

It was certainly to their credit that the German Higher Command should have seized the opportunity to break off the fight before meeting with a decisive and irremediable defeat.

The anonymous pamphlet informs us that "the retreat of von Kluck and of von Bulow drew in their train the abandonment of the advantages gained by von Hausen. This was the more regrettable since the generals in command of the French centre, in spite of the reinforcements continually reaching them, could not have held out for a day longer. If the withdrawal of the German right wing had not been ordered, for tactical

reasons, von Bulow's left wing and von Hausen's army would have pierced the French centre on the 10th September."

It is on this latter point that the French and German accounts are in the strongest disagreement. After having been obliged to give ground on the morning of the 9th September, Foch's army had counter-attacked with success at midday on this date. The French Operation Orders for the 10th had directed the resumption of the offensive at 5 a.m. along the whole front. The Germans are really in no way justified in claiming that they would have defeated the French on the 10th.

The anonymous author makes the following statement:—"Towards the close of the morning of the 9th General von Marwitz (who was in command of the screen placed to the south of the Marne by von Kluck) was obliged to report to his superior that he was unable to hold out against the British Army and the 18th French Corps.

"As the superiority of the enemy's left wing became by degrees more marked, General von Kluck was obliged, with the approval of the Chief of the Great General Staff, to order the German troops to draw off.

"The retrograde movement of the I. German Army naturally led to a modification in the front of the neighbouring armies, namely the II. and III.

"In spite of the favourable state of affairs at the German centre, von Bulow felt compelled on the 10th to order a retreat, for he had received an intimation from von Kluck that morning that the latter found it impossible to beat the troops under Maunoury and French decisively owing to the fact that they outnumbered him in the ratio of two to one."

From the foregoing statement each one of us may draw his own conclusions as to which of the two armies stood the better chance of smashing the other on the 10th, had von Kluck not broken off the engagement when he did.

The writer of the *Revue* article has no hesitation in expressing the opinion that von Kluck would certainly have been crushed on the 10th or 11th between the forces of Maunoury and French, reinforced by the 18th French Corps. At the same time, von Bulow, attacked in front by Foch and on his right flank by Franchet D'Esperey, would have found it extremely difficult to escape disaster.

Had the Germans attempted to continue the fight, it is probable that they would have met with a defeat comparable only to that of the losers at Waterloo, Leipzig and Jena. In all probability they could not, in such an event, have made another stand until they had reached at least the line of the Meuse.

The initial mistake made by the German Great General Staff was, as already stated, a want of appreciation of the real value of the French railway system from a military point of view.

It would also appear that, after the first victories of the War which, relatively speaking, were so easily won by the Germans the elation caused thereby at the German General Headquarters led to all caution being thrown to the four winds. The German Army Corps were let loose in chase of the Anglo-French forces in the same heedless fashion that a pack of hounds would hunt a hare. No attempt appears to have been

seriously made to co-ordinate the movements of the several components of the German invading army with the object of effecting an envelopment of the French Army on any well-considered plan. The German Great General Staff hoped, it would seem, to surround the French Army entirely and not only to outflank it with the German right wing as stated by the anonymous author in his pamphlet.

The writer of the *Revue* article is of the opinion that von Kluck did all that was humanly possible on the memorable days of the Battle of the Marne and that he did not commit grave tactical mistakes as some have asserted.

The late Colonel-General von Moltke, it was generally recognized, did not possess abilities equal to those of his famous uncle and once the great German military machine was set in motion, he was neither strong enough nor far-seeing enough to direct it into the right path. He is said to have hesitated, to have issued orders and counter-orders and to have deferred unwisely to the suggestions of his Imperial master ; there was not present in his mind any dominating idea such as that disclosed in Joffre's handling of the situation.

The German armies were not echeloned sufficiently in depth, but were distributed along the whole wide front. Although the plan of campaign is said to have been based on the idea of utilizing the right wing as the weapon of manœuvre, yet it was on the left wing that the German forces were accumulated.

On the extreme right, von Kluck's Army was too weak to carry out the task assigned to it ; had he been given two Army Corps in addition to those allotted to him, he would in all probability have won the battle.

Joffre's plan for meeting the German onslaught was so simple and so natural that the Germans should, it is suggested, have been able to guess it and to have adopted counter-measures to meet it. The Germans should not have passed by Paris heedlessly as they did without masking it ; it was not only a great fortress but an exceedingly important railway centre.

German strategy went bankrupt in the conduct of operations. Although the Germans started with a plan of campaign which was well thought out and carefully prepared, yet they failed to place superior forces where they were most required at the decisive moment. The natural consequence was that they lost the battle ; the excellence of the machine in the hands of the Great General Staff alone enabled it to stave off disaster.

Tactically the Battle of the Marne was a French victory, as the French Army remained in possession of the field of battle. Strategically, it was the great victory which seems to preclude the possibility of the final triumph of the Central Powers.

A CHRISTIAN CONSCIENCE AND THE ARMY.

The *Revue* article is an address for the prosecution (by Capt. E. Chapuisat) before a Military Tribunal in Switzerland, in a case in which one, J.B., a conscientious objector, was accused of insubordination, in that he refused to report for military service.

The address discloses the following particulars concerning J.B. :— This man had already been tried by a Military Tribunal in August, 1915, and on the 11th of that month had been sentenced to four months' imprisonment, and loss of civil rights for one year (he was also condemned in costs) for refusing to perform his military duties when his unit was mobilized in June, 1915.

At his first trial the accused entered into a long explanation of the grounds on which he claimed exemption from military service. His views may be summed up in a few words : War is the creator of hatred ; the loss of (political) liberty is by no means the worst of all ills.

On his release J.B. was offered a transfer to a non-combatant branch of the Service, but this he refused. He was called up again for a fresh term of military duty in May, 1916, and he again refused to report himself, and indeed wrote to the military authorities stating that he would not serve. At the preliminary magisterial enquiry which took place on the 31st May, 1916, with regard to this man's second default, he re-stated simply the point of view he held on this question and drew attention to the fact that his first conviction had made it necessary for him to resign his position as a teacher in a Government School. He seems to have borne an exemplary character, and to have given complete satisfaction to the parents of his pupils and to the governors of the school up to the time of his first conviction. He further seems to have been careful not to imbue those who were under his care, or those who frequented his company, with the doctrines which had brought him to grief.

Having recited the past history of the accused, the prosecutor informed the Court that although he was now at liberty to bring his address to an end without any further comments and simply to ask the Court to pronounce its verdict and judgment, as provided by law, still he felt that he would not be doing justice by the accused if he adopted this course. In continuing his address Capt. Chapuisat passes in review the opinions which have been held by eminent men regarding the extent to which a man may, on grounds of conscience, claim to be exempt from complying with duties imposed by a State on its citizens. He states that about ten years ago a periodical, *La Semaine littéraire*, published in Geneva, started an enquiry in connection with conscientious objections to the performance of military duties. He did not propose to repeat the opinions of all who were asked to express their views on the subject, but to call the attention to such of these opinions as appeared to him to be of value in relation to the case before the Court. He proceeded to quote the following opinion of Charles Gide :—" I think that a government has the right to inflict on conscientious objectors (in relation to military service) the penalty of exile, nothing more and nothing less. The State should say to such a one : ' It is necessary to impose compulsory military service on all citizens in order to provide for the continuance of our national existence and the majority of the citizens have decided that this shall be the law. Is it to be understood that you accept neither this view, nor this decision ? Alright ! Cease then to be a member of our society and attach yourself to some other whose views coincide with

your own.' " Capt. Chapuisat, at the same time, pointed out to the Court that these views were very similar to those held by Plato in his Dissertation on Duty (in the *Crito*) from which he quoted the following striking passages :—

" Since thou hast been born, since thou hast been nourished and brought up, thanks alone to us, wouldst thou dare to contend that thou art not our child, and our servant, the same as were thy progenitors ? And this being the case, dost not thou think that thou hath the same privileges as we ourselves possess, in equal measure, so that it may be permitted to thee to do for us all that we should demand of thee ? That right that thou canst have against a master of causing pain in return for pain, of meeting abuse with abuse, by giving a blow for a blow, dost thou think also to possess against thy native land and her laws ? But, if we should endeavour to rid ourselves of thee, believing our action to be just, thou wouldst wish to prevent us to deprive thee of the safeguard of our laws and of thy native land ! Wouldst thou, who makest a profession of being fair-minded, hold this to be justice ? Does thy wisdom leave thee ignorant that thy native land is worthy of respect and veneration, before the gods and mankind, in a degree higher than that due to a father, a mother, aye than that due to a whole race of progenitors ? In order to honour thy native land, is it not necessary to give in to her and to humour her more even than thou wouldst thy angered father ? Is it not necessary to bring her round to thy way of thinking by persuasion, and failing that to obey her commands and even to bear, without a murmur, every burden which she may put upon thy shoulders ? Should thy native land will that thou shouldst be scourged with whips or that thou shouldst be bound in chains, should she will that thou shouldst go forth to fight her battles and to shed thy blood in her cause, it would be necessary for thee to depart promptly without any questionings, for to act thus is demanded by Duty, and one durst neither disobey, nor back out, nor quit one's post, but in the army, in the courts of justice and everywhere, it is necessary to obey the orders of one's native land, or to use persuasion with her on such occasions as this may be permissible, for if it be impious to offer violence to thy father or to thy mother, still more heinous is it to act forcibly against thy native land. . . . And should there be one amongst ye who, not being able to conform in his conduct to our ways, desires to remove into a colony or to dwell in some other part of the world, he will find there is not one amongst us who will oppose his doing so ; such a one may depart from amongst us with all his worldly belongings and establish himself where it seemeth to him best. However, should anyone, after having given full consideration to the manner of the justice and the methods of the police in our Republic, say to us, that he agrees to do all that we may command, yet disobeys us, we hold, for the three following reasons, that such a one acts unjustly in that he does not obey those who have given him birth, in that he tramples underfoot those who have provided him with food, and in that, after having agreed to obey us, he forswears himself and has not taken the trouble to persuade us."

Leaving further ancient opinions on the subject aside and turning to modern ones, Capt. Chapuisat quoted the following views of D'Estournelles de Constant on the subject of military service: "If one does not approve of it (*i.e.* the law on the subject) one can and one must in such a case exert oneself to bring about a change, either by use of the franchise, by taking other constitutional steps, by propaganda work, etc., but one *must* not act in defiance of it, for this is the negation of constitutional authority, of the social pact."

Very similar views to the foregoing are contained in the declarations of other eminent men whose opinions were next quoted by Capt. Chapuisat. He continued:—

"But what is to be gained by multiplying the opinions expressed by great Christians, since after all conscience is something individual and free, if not altogether independent, thanks to the influences which it at times reflect?"

"What is to be gained by reminding B. (*i.e.* the accused) of the Huguenots, and Coligny, or of picturing to him the massacres in Armenia which nations, called Christian, took no measures to suppress by force?"

"What is to be gained by going into the question of Belgium, heroic yet unfortunate, which to-day would be passing rich had she preferred to lay down her arms when summoned so to do, but she took another course as her honour demanded that she should resist?"

Capt. Chapuisat observed that he recognized the imperfections of Swiss legislation and continuing stated that possibly in cases of conscientious objection both the motives and the consequences might vary considerably; nevertheless, J.B., the accused in this case, had offended against the law. After dealing with certain technicalities of the Swiss law regarding military service and the punishments provided for, he asked the Court to find J.B. guilty and (a) to sentence him to:—

- (i.). One year's detention.
- (ii.). Exclusion from the Army, in accordance with the provisions of the Military Penal Code, in the form known as degradation.
- (iii.). Deprivation of political rights for two years.
- (iv.). Payment of costs.

(b). To state that the period of detention to which J.B. may be sentenced might, as an act of grace, be reduced or remitted altogether and to submit a recommendation on the point to the General Commanding.

IMPRESSIONS FROM THE AUSTRO-HUNGARIAN FRONT.

The Austro-Hungarian Army with its dozen nationalities, its different languages, and its various customs is, says the writer of the *Revue* article, specially interesting to a Swiss.

This army, so motley in composition, apparently so wanting in homogeneity, has, however, astonished every one, who has come into close contact with it during the present war, owing to its moral unity and its solidity. The present war is not a race war, as is proved daily by the

operations in which the Austrian Army has been playing a part. Regiments of the Dual Monarchy recruited in Croatia, Dalmatia, Istria and the Trentino are fighting against the Serbians, the Slavs and the Italians ; peoples of their own race.

It is stated that a spirit of benevolent tolerance and mutual understanding prevails amongst the twelve nationalities owing allegiance to the Hapsburg Emperor, a fact which much facilitates the co-operation of the forces in which there are such extreme differences in language and in temperament. All the soldiers of the Dual Monarchy know a few words of German which is the official language of the Army, except in the case of the Hungarian Landwehr (the Honved Army).

The striking characteristic of this army is its suppleness, both physical and intellectual. The infantry advances rapidly overcoming obstacles with ease, the cavalry ride with a good seat, in well ordered ranks, and with boldness. Discipline has not lowered the intelligence of the soldiers to the same dead level, nor has it caused an atrophy to set in to destroy their will power ; on the contrary, it bends without breaking, it allows each individual as well as each nationality to retain its own characteristics, its own mentality, its own customs in order to obtain thus a combined effort so much the greater by reason of the latitude shown. The special and best qualities of each race co-operate to secure a common end.

The officers of the Austro-Hungarian Army possess intellectual suppleness, they are broad-minded and can adapt themselves readily to circumstances. They possess the perseverance of their German cousins, the charm of manner of the Slav, Magyar pride and the careless gaiety of the Latin races.

The soldier in the ranks is subject to the same influences as his officer ; his mentality is a curious mixture of traits in character and of habits which, elsewhere, might appear irreconcilable. He has an open mind, is easily elated, touched with a tinge of oriental fatalism ; he is tenacious and not easily disheartened. His strong views regarding his rights do not allow him to forget that he has responsibilities as well.

Men from the north, from the south and from the east meet in the ranks of the Austro-Hungarian Army ; the fusion is sufficiently complete to produce a remarkable type of soldier.

The Austro-Russian Front.—Attention is drawn to the fact that the Austrian fronts differ widely from the Franco-German front in the West. The character of the War being waged on the first-mentioned fronts also differs from that in the Western Theatre.

In Galicia and Poland, the opposing armies are constantly manœuvring, and it is only during the winter months that the fronts occupied by them become stationary. The distances between the opposing trenches in this Eastern Theatre, moreover, is measured in kilometres, instead of in metres as in the Western Theatre.

In Serbia : The War is still conducted on the old lines of field operations, in fairly open country.

On the Isonzo and in the Alps : The operations possess all the characteristics of mountain warfare.

At the beginning of the campaign in Galicia, in 1914, the war was one of manoeuvres similar to the field operations of former times, later the opposing forces came to a standstill in the Carpathians until the resumption, in the spring of 1915, of the offensive by the Austro-Germans which resulted in the expulsion of the Russians from Galicia. Since then trench warfare has been resorted to in Bukovina, on the Sereth and on the Styr.

Trenches.—The types of the trenches in use varies according to the nature of the soil. Generally speaking, the trenches have a sinuous trace and are sunk to a depth of about 6 ft. 6 in. below the natural surface of the ground; timbered bombproofs, covered with 3 ft. 3 in. of earth, are provided at intervals. In the sandy soil of Poland very extensive use has to be made of sandbag revetments, and where timber is abundant it is also largely used. No excavations are made in or under the parapets, but shelters for six to ten men are constructed along the rear of the trenches.

On the Pruth, the frequent inundations, caused by the river overflowing its banks, form natural obstacles.

Obstacles in Front of the Positions.—In front of the fire trenches and furthest from them, a minefield, 20 to 40 yards in breadth, is usually provided, inside this minefield is constructed a belt of military pits, with a high entanglement of barbed wire (4 ft. 8 in. high) over the same, nearer the fire trenches again a second wire entanglement, on short stakes the tops of which are kept within about 12 in. of the ground, is next provided; hand grenades, fastened to stakes by long cords, are strewn along the low wire entanglement. The small movement necessary to disengage these grenade cords when a man's foot catches in them is said to be sufficient to explode the grenades. The gaps left in the lines of obstacles for the patrols to pass through are provided with movable chevaux-de-frise barriers. In the event of gaps being made in the wire entanglements by hostile artillery fire, these also are immediately closed by chevaux-de-frise barriers specially stored in the trenches for this purpose.

Measures for Security.—(a). Every company in the trenches pushes out a guard consisting of an officer and 20 men to a distance of 800 to 1,200 paces from the fire trench; this guard is provided with telephonic communication with the company commander and is frequently visited by patrols from the company.

(b). Each company has also one or two listening posts, consisting of a N.C.O. and two or four men; these are pushed out 400 to 500 yards in front of the minefield.

A short account is given in the *Revue* of the fight of Novo-Aleksiniec which took place on the 26th and 27th September, 1915, when the Russian line was broken on a front of 3,000 to 4,000 yards.

The Russian Soldier.—The writer of the *Revue* article states that he has visited many camps in which Russian prisoners are interned. From what he has seen of them he considers Russian soldiers to be docile, respectful and well disciplined. They retain a military bearing in captivity, they salute smartly and carry out all orders instantly. It takes a good deal to demoralize them.

The greatest courtesy is said to exist between Austrian officers and captive Russian officers.

The Russian Artillery did not come up in numbers with the Austrian Artillery.

Przemysl.—The forts defending this town were constructed in 1893–1894, in accordance with plans of Lieutenant-Field-Marshal de Salis Soglio; they are placed at from 10,000 to 15,000 yards from the centre of the town. The Russians almost completely destroyed all these forts during the siege, and what they had left the Austrians completely destroyed before evacuating the town. A detailed description of the destruction is given in the *Revue* article.

After the occupation of Przemysl the Russians attempted to restore its defences, largely by using timber stockading. This town has experienced three sieges in one year, and it would appear that it is now threatened with its fourth siege during the present war.—(*To be continued*).

NOTES AND NEWS.

Switzerland.—A special correspondent calls attention to a circular, on aeronautics in the Swiss Army, issued to the Press by the Swiss General Staff in which reference is made to the great strides made in military aviation since the beginning of the War. It is pointed out that great expenditure is required to keep pace with the progress made. Thanks to the voluntary contributions of the Swiss people a large number of machines have been acquired for the Swiss Army, but much more than this, it is said, must be done before the Swiss military wing can be ready for active service. The value of dirigibles is frankly acknowledged, but, according to the Swiss General Staff, "this weapon of war is not within our reach owing to the very considerable expenses which it involves."

It is said that the circular in question has been issued in order to prepare the public for the inclusion of a large vote in the Budget for Military Aviation Services, and perhaps also as a feeler to ascertain whether funds can be raised by public subscription for this purpose.

In view of the statement in the circular "that one of the principal rôles of aircraft is that of carrying out reconnaissances," it is thought too that it is intended to utilize aircraft instead of cavalry for the purposes of distant reconnaissance work. It is suggested that, if this be the case, it may not be necessary to keep up quite so large a force of cavalry in Switzerland as at present.

The issue of the circular proves that the Swiss General Staff place a correct value on aviation as a means for exploration and observation, the Swiss people will, it is said, readily appreciate the point too.

The prices charged by military tailors for officers' uniforms, etc., in Switzerland is said to be too high. It is urged that the Government should step in and fix maximum prices for the several articles of uniform, alterations and repairs thereto, etc., in order to protect the unfortunate officers, who to a great extent are in the hands of something in the nature of a Trust.

It is said that sufficient attention is not being given in Switzerland to

gymnastic instruction in schools. A Federal Ordinance of 1909 expressly provides that three hours' instruction per week shall be given in gymnastics in every Normal School, but hitherto it is only in the Cantons of St. Gallen and of Soleure that this rule is being complied with.

The national fête day—1st August—passed off without any unfortunate incident. At Zurich alone were there any anti-patriotic demonstrations; these were occasioned by young men who were to a great extent strangers.

The deaths are announced of Colonels Hungerbühler and Wartman, Lieut.-Colonels Soutter and Grivel and Lieut. de Weck.

INFORMATION.

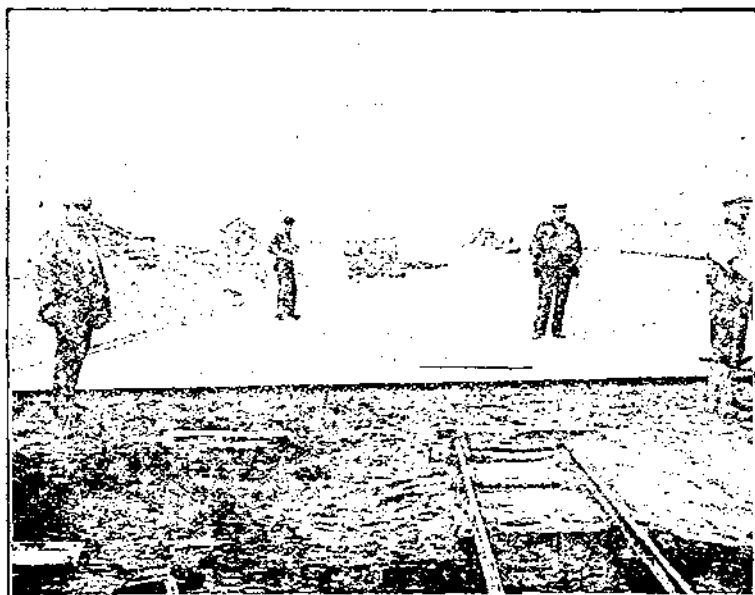
It is stated that there were numerous errors in the figures given in relation to the Belgian Army in the articles dealing with the operations in Belgium which appeared in the numbers of the *Revue* for June and July of the current year (*vide R.E. Journal* for September).

It is said that at the beginning of the War the numbers of the Belgian Army were not 120,000 men as stated in the article, but 214,000 men.

This number of the *Revue* concludes with a bibliography. Numbers of the books mentioned deal with the present war.

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