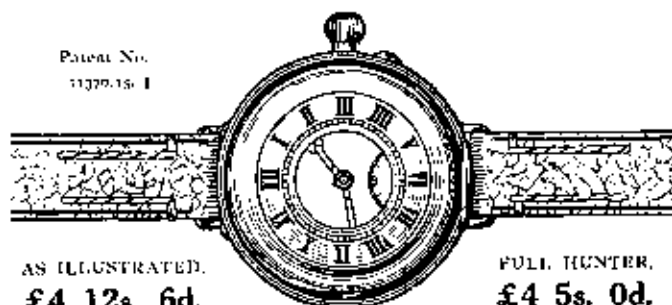




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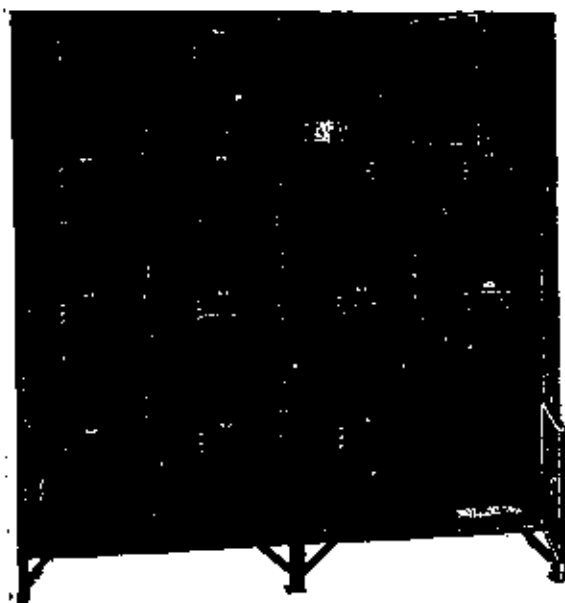
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## NOTES ON A DIVISIONAL LAUNDRY.

By CAPT. R. E. STRADLING, *Adjutant, Divisional Engineers.*

*General.*—Orders were received to construct a Divisional Laundry on a sufficiently large scale to take the following laundry machinery :

Three Washing Machines.  
Two Hydro Extractors.  
Steam Boiler.  
Portable Steam Engine.  
Steam Drying Apparatus.

No details of these machines could be obtained at first, but later, information was supplied as to makers' names, and we were able to obtain catalogues from the firms, with details. These enabled an estimate to be made of floor space required for the various machines.

Timber was scarce, and only small scantlings obtainable, so the roof trusses had to be designed accordingly. Roof covering was corrugated iron, and the walls rough boarding, felted on outside.

*Site.*—Site was on sloping ground towards a stream which was dammed to provide the water supply. The main road ran parallel with the direction of the slope, and a switch road ran along upper end. A lorry standing was made to the front of the unloading shed, so that lorries might back off the switch road, and unload direct into shed.

*Unloading Shed and Disinfecting Rooms.*—The loading shed was 28 ft. 4 in.  $\times$  8 ft. and each disinfecting chamber 8 ft.  $\times$  8 ft.  $\times$  8 ft. These were designed to prevent as far as possible any contamination between the verminous clothing, and those disinfected. For this reason, two doors were put to each disinfecting chamber. The outlet door for disinfected articles opened into a space which was partitioned off from the unloading shed to which the inlet door opened. There was some difficulty in getting either concrete or brick for these chambers, so they were constructed with concrete floor only, the walls and roof being wood partitions lined inside with sheet iron, jointed with red lead and spun yarn, and covered outside with match boarding, and packed in between with sand. The doors and door frames were made with oak, and covered with sheet iron, special strap hinges being made.

From the disinfecting chambers the clothes were placed on a charging platform, running along the outside of the wash-house, from which they are pushed through shutters to the washing machines. Disinfecting was arranged by wet and dry steam in coils. Under the charging platform runs the shafting from which the washing machines are driven.

*Wash-House.*—Wash-house 35 ft.  $\times$  27 ft. 6 in.

*Washing Machines.*—Three washing machines. One by Bradford. Two by Smith Paget. Layout of machinery as shown in sketch.

*Rinsing Machines.*—Though the rinsing can be done in the washing machines, it was thought a saving could be effected if special apparatus was put in for this. The idea of those designed and erected here was obtained from a local laundry, at the hospice near by. A few adaptations were found necessary. From these machines the clothes pass to the hydro extractors.

*Hydro Extractors.*—These are Bradford machines, driven from an overhead shaft, from which the paddles of the rinsers are also driven. The support of this overhead shafting caused some slight difficulty, but was overcome by the erection of two inverted "A" frames, as stiffeners.

*Drying Rooms.*—Two drying rooms, each 20 ft.  $\times$  23 ft. From the wash-house the clothes are taken to the drying rooms, of which there are two, to be used alternately. The heating was by a steam coil, over which air was driven, by a fan, into the chambers. This fan was driven by a small petrol motor. This was an extra to the machinery supplied as a "set." If it had been known at first that this type of heating was proposed it might have been possible to arrange to drive it from the steam engine. From the drying rooms the clothes pass to the mending rooms.

*Mending Rooms.*—Two mending rooms, each 21 ft.  $\times$  20 ft. The only point about these is that as much light as possible should be allowed, and for this reason glass, instead of oiled linen, was used in the windows. From the mending room clothes pass to the ironing room.

*Ironing Room.*—One ironing room, 44 ft.  $\times$  20 ft. This room should be as light as possible. From this the articles pass to the sorting room.

*Sorting Room.*—One sorting room, 14 ft. 8 in.  $\times$  20 ft., and thence to the

*Clean Clothes Store Room.*—29 ft.  $\times$  20 ft. This is provided with shelving. The motor lorry track to the door of the clean clothes store enables loading to be done direct from the room.

*Engine Room.*—25 ft.  $\times$  20 ft. The engine was by Ransome and Portable, and

*Boiler.*—By Ruston-Procter. Floor—concrete. Foundation plan for boiler, obtained from makers. The drive from engine was in

two directions, one to shafting under sharging platform, and one to overhead shafting over hydro extractors.

*Steam and Water Piping.*—Steam was laid on to the following :— Hot-water tank. Washing machines. Cock in wash-house, for soap solution. Steam heating coils to drying room.

*Hot Water* was laid on to Washing machines, Rinsers, Soap solution cock.

*Cold Water* was laid on to Washing machines, Rinsers, Soap solution cock, Engine and boiler, Hot water tank, Petrol motor tank.

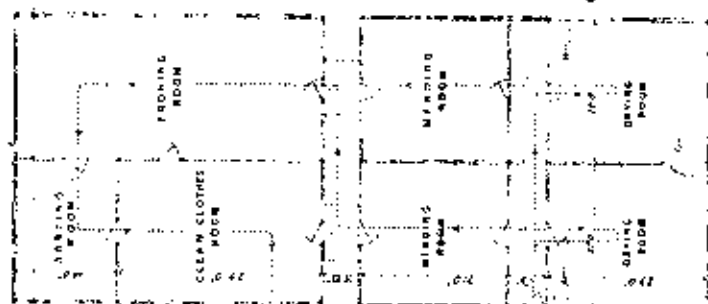
*Water Supply.*—Stream at bottom of field dammed, and water pumped by a Merryweather Steam Pump to cold-water tank through a 2 in. main.

*Drainage.*—A 4-in. iron pipe took laundry effluent about a thousand yards to a field over which it was spread to be treated by broad irrigation. This method of treatment was suggested by D.M.S. (Sanitation), --- Army, as no chloride of lime was available.

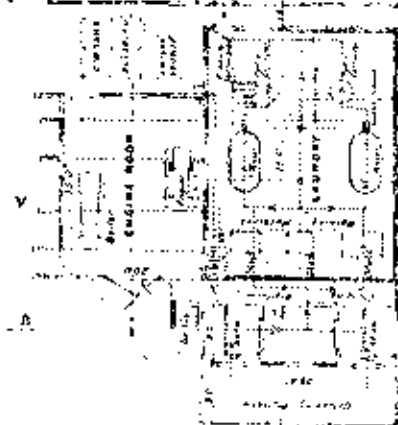
*Output.*— Test was run, and about 10,000 articles were dealt with, in one day. This division left the area after these first tests, and so no further information can be given on this point. With good organization this 10,000 should easily be dealt with in an 8-hour working day.



BLOCK PLAN



NOTE: The plan of the laundry building is shown in the plan of the laundry building.



PLAN

SECTION A A

SECTION A A

SECTION A A







## THE HOLDING POWER OF NAILS.

By 2ND LIEUT. J. M. HANCHARD GOODWIN, R.E.

It came to my notice a few months back, at an examination set at the R.M.A., that the text-books on Military Engineering were very incomplete and inexact on the subject of Nails and their Holding Powers. It struck me at the time that a mathematical course of reasoning might produce a formula to replace the long series of concrete examples given in *M.E.*, IIIA., somewhat in the way of the Gordon's Formula approximation; that is to say that a definite mathematical form could be obtained to which physical experimental constants could subsequently be added.

The subject divides itself under two headings: Drawing by direct pull, and drawing by indirect pull. The first is made use of, to take an example, when a pair of pincers or a claw-hammer extract a nail from a piece of wood; the second is found in such cases as supporting a transom against the side of two legs by means of nails. In the first case the nail, if pulled directly, comes out straight; in the second the nail is bent.

### CASE I.—DRAWING BY DIRECT PULL.

Imagine a nail to be imbedded in a piece of wood and a tension to be exerted on its head until the nail commences to draw. At this stage of the proceedings the maximum friction is being exerted between nail and wood, and is equivalent to the withdrawing force. To determine the total frictional force developed it is necessary to find the pressure exerted by the wood on the nail; I propose to show that this pressure is equivalent to the ultimate resistance of the wood to shearing.

Consider for a moment what happens when a nail is hammered into a block of wood. First it parts the fibres of the wood, and then, as the stress approaches the ultimate shearing stress of the fibres, they break, so that the pressure on the nail cannot exceed this stress. Evidently, also, the stress cannot be less than this value, for if so the fibres should not have broken. Call this stress

S lbs. per sq. in.

Then if " $\mu$ " is the coefficient of friction between wood and nail, and " $A$ " is the total area subject to the above stress, it follows that the force required to draw the nail is

$$\mu AS.$$

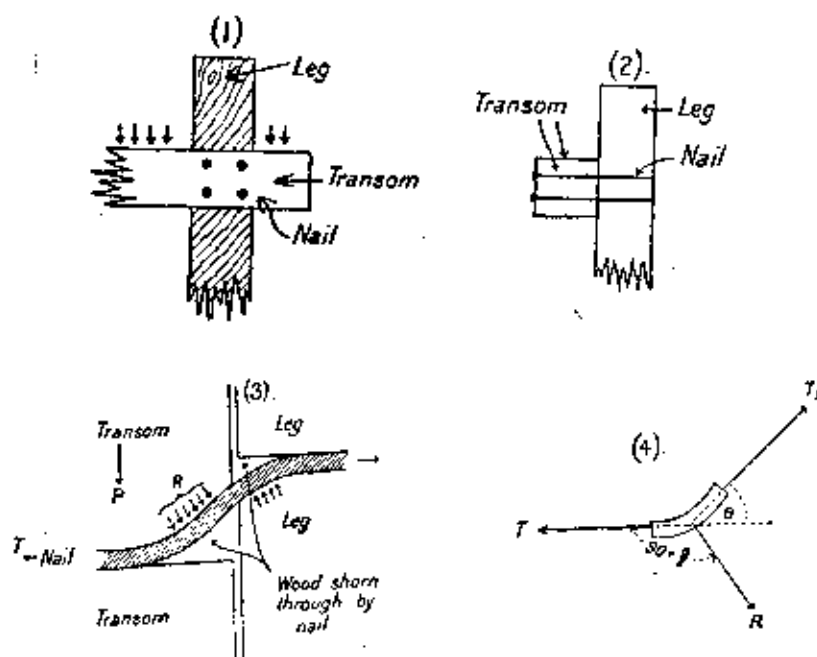
This is not strictly true, but very approximately so. The strict truth is that " $A$ " is the area sustaining the pressure, resolved at right angles to the line of drawing of the nail. The deviation is so small as to be negligible.

The value " $\mu S$ " is a function of the wood alone, for that part of " $\mu$ " which applies to the nail is obviously constant, except where the nail is rusty. What is required, therefore, is a table of drawing values for different woods, similar to the table of ultimate, compressions, tensions, etc., in Part IIIA., *M.E.* A table of areas per inch length of different nails would also be of use. With these two tables prepared, the direct holding power of a nail is a mere matter of one slide rule adjustment.

### CASE II.—DRAWING BY TRANSVERSE PULL.

The second case is slightly more complex. It deals with circumstances such as that shown in *Figs. 1 and 2*. The actual supporting power of the nail is due

1. To its rigidity.
2. To a longitudinal tension which comes into action as soon as the nail commences to bend, as in *Fig. 3*.



Consider the forces acting on the nail as it is about to draw. We may consider each half of the nail as being pulled horizontally with a

force  $T$ . Pressing upon each side of the nail are equal and opposite forces, the pressure,  $P$ , of the transom and the reaction of the leg. Beyond this there is a sideways integrated reaction,  $R$ , on each half the pressure of the wood through which the nail has shorn.

We can draw a force diagram for each half of the nail considering it as a rigid body; the only part that concerns the present question is one-half of the curved portion of the nail. Take the left-hand portion.

There is the tension  $T$  pulling to the left. There is the tension  $T_1$  pulling at the maximum angle of bend, which we will call  $\theta$ . There is the reaction,  $R$ . Moreover  $T_1$  and  $T$  are very nearly equal; for the present purpose they may be put equal to each other.

In this case therefore  $R$  bisects the angle  $T, T_1$ .

$\therefore R = 2T \sin \frac{\theta}{2}$ , and acts at an angle of  $90 + \frac{\theta}{2}$  with the horizontal pull  $T$ .

Now consider the equilibrium of the transom. There is the pull of the nail at an angle  $\theta$  equal to  $T_1 (=T)$ ; there is a reaction  $R_1$  equal and opposite to  $R$  above; and there is a downward pressure  $P$ .

Therefore we have its equilibrium as shown in *Fig. 5*; and consequently

$$R_1 \cos \left(90 - \frac{\theta}{2}\right) = T_1 \cos \theta.$$

$$\text{I.e.} \quad R_1 \sin \frac{\theta}{2} = T_1 \cos \theta.$$

$$\text{I.e.} \quad R \sin \frac{\theta}{2} = T \cos \theta.$$

$$\text{Substituting:} \quad 2T \sin^2 \frac{\theta}{2} = T \cos \theta.$$

$$\text{I.e.} \quad 2 \sin^2 \frac{\theta}{2} = \cos \theta.$$

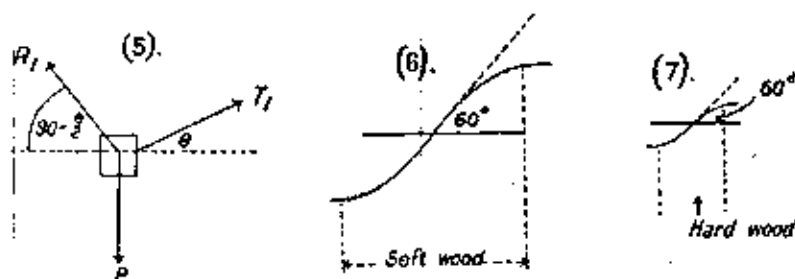
$$\text{I.e.} \quad 1 - 2 \sin^2 \frac{\theta}{2} = 1 - \cos \theta.$$

$$\text{I.e.} \quad \cos \theta = 1 - \cos \theta.$$

$$\text{I.e.} \quad \cos \theta = \frac{1}{2}, \theta = 60^\circ.$$

That is to say, that the maximum angle taken up by a nail, bending in a piece of wood, is  $60^\circ$ . The meaning of this is important. It shows that in a piece of soft wood the conformation taken up by the nail will be as in *Fig. 6*, with the bend extending over a long distance;

while in a piece of hard wood the amount of bend is the same but it extends over a smaller length (*Fig. 7*).



Returning to *Fig. 5* once more.

$$P = R \sin 90 - \frac{\theta}{2} + T \sin \theta$$

$$= 2T \sin \theta = \sqrt{3}T.$$

But  $T$  is nearly equal to the tension required to draw *directly* the portion of nail imbedded in the leg, *i.e.*  $= \mu SA$ .

$\therefore P = \sqrt{3}\mu SA$ , where  $A$  is the area of nail in the leg.

It will be noticed that the area of nail in the leg is all that matters; the head of the nail will provide an equal and opposite tension in the transom.

$\therefore$  we have:—

The transverse pull a nail is capable of resisting is  $\sqrt{3}$  times the direct pull it can sustain. This direct pull is the product of the length of nail imbedded, the area per inch length, and the "drawing value," the product  $\mu S$ , of the wood.

## HORSEWATER TROUGHS AND HORSEWATER POINTS.

By CAPT. H. S. BRIGGS, R.E.

WITH reference to recent articles in the *R.E. Journal* showing designs for horsetroughs and horsewatering points, the drawing reproduced herewith is offered as an alternative and more practical design. It is claimed that the following advantages over the designs referred to are gained.

(a). Economy of labour in constructing the standings. The dimensions shown are ample, and ensure horses filing right up to the end and not passing behind one another. Although horses can approach the waterpoint across country in dry weather, experience has shown that they must be allowed to use the roads in wet weather. To avoid congestion of traffic, therefore, the waterpoint should fulfil the following conditions:—

(1). It should consist of two or at the most three canvas 600-gallon troughs, each trough watering about 300 horses an hour. Large waterpoints watering thousands of horses per hour are a mistake. (2). It should be sited on a bye road. Long approach standings are then unnecessary and the waterpoint can be placed right alongside the road, as shown on the drawing.

(b). Economy of labour in drainage arrangements. The floor of the watering place should be raised above natural ground level by the simple expedient of putting the material straight on the ground and thus avoiding the heavy earthwork frequently undertaken. If the floor is given a slope outwards each way, a shallow trench all round will do all the drainage necessary. Halved pit props with a couple of inches of stone, mine earth, or broken brick on top make a luxurious standing. There are, however, numerous alternatives, one of which is to have none at all. This method invariably leads to trouble.

(c). As regards design of trough the ordinary 600-gallon canvas trough, supported by a timber backing, is best. If the trough is to last it must be supported at the sides and bottom. The canvas soon rots if allowed to take the weight of the water. A trough frame and canvas trough as shown on the drawing possess the following advantages over the sheet-iron variety as usually made:—

(1). Portability. The wood frame can often be made of timber found in ruined villages and then only requires the canvas to complete.



- (2). Considerable storage capacity.
- (3). The existing stocks of canvas troughs are made use of instead of diverting corrugated iron sheet from its legitimate uses.
- (4). Easy to construct and can be taken to pieces and put up again, and is watertight.

The following points in connection with horsewatering points are usually forgotten :—

(a). " IN " and " OUT " Noticeboards, also a Noticeboard lettered as follows :—" DISMOUNT—BITS OUT—AND FILE RIGHT ALONG."

(b). A substantial fence all round, made not of barbed wire nor of plain wire but of posts and timber rails. A removable bar which can be used to close up either the fair weather or wet weather entrance as required should be provided.

(c). Police arrangements. Noticeboards alone cannot be relied upon. A man with a stick is necessary.

(d). Daily R.E. inspection.

And last and most important

(e). Ensure a delivery of at least 1,000 gallons per hour when continuous watering is expected.

The design of horse trough reproduced herewith is due to the O.C. of an Army Troop Company, R.E.



## REVIEW.

### PAGES D'HISTOIRE, 1914-1917.

Published by the Librairie Militaire Berger-Levrault, 5-7, Rue des Beaux Arts, Paris.

(Continued from R.E. Journal for November, 1917).

The 136th number of this series contains the official communiqués issued by the Central Government to the French Provincial Authorities during the month of May, 1917; it is the XXX. volume dealing with this subject.

The 137th number is entitled *Leurs Buts de Guerre* and consists largely of a collection of extracts from German documents dealing with Germany's War aims. The volume is published under the Editorship of Monsieur G. Pariset, a Professor of the Nancy University, and is issued with a red wrapper on which is printed in bold letters the following explanatory note relating to the contents of the volume: *La Paix qu'on nous offre*

#### CE QU'ELLE CACHÉ!

In the five chapters contained in the volume under notice an intense illumination is thrown on the aims which the Teutons had in view when they started the War in 1914, and on the various peace intrigues and counter-intrigues that have been on foot in the German Empire since August, 1914. Chapter I. deals with the German dreams in the early days of the War (1914-1915) and is subdivided into four parts. The first of these parts is headed *Perspectives glorieuses* and contains extracts from German documents which clearly show that, in 1914, Germany, drunk with pride, felt she had a sure thing in hand at the time she rushed into the War; she conjured up visions of a future in which her *Kultur* would displace the ethical codes and spiritual tendencies of other nations, in which her power and influence would be supreme in all terrestrial regions and in which her covetous desires would be amply satisfied.

In an extract quoted from an article entitled *Die Wahren Ursachen des Weltkrieges*, 1914 (The true causes of the World War of 1914), by Lieut. Karl Kuhn, which appeared in No. 10 of the *Aktuelle Bibliothek* (published at the end of August, 1914), the author thereof describes the scenes which occurred when Wilhelm II. addressed a great gathering of his subjects in Berlin shortly after the declaration of War. He tells us that all present felt that they were taking part in one of the most memorable events to be recorded in the History of the World. "It seemed to me," he continues, "that the Goddess of History was opening to us a new and glorious era of marvellous splendour for Germany

and that the Almighty, pouring down from the high heavens His blessing on the Chieftain of the German Nation, was crying aloud to him : 'Thou hast held the sceptre of peace in thine hands for as long as it has been Mine will that thou shouldst do so, but now that thou hast obeyed Mine call to arms, Oh German Cæsar ! I desire to place on thy Imperial brow the laurels plucked on the fields of battle, symbols of victory and of the most sublime grandeur ! ' "

As another example of German intoxication take the words of Maximilian Harden in the *Zukunft* of the 17th October, 1914. It was he who wrote : " We make War with the solid conviction that Germany can demand and must obtain a larger slice of the world and greater possibilities in the various fields of activity. Kingdoms to which she gave a new life still survive ; others have succumbed owing to their inherent weaknesses. Spain and the Low Countries, Rome and the Hapsburgs, France and Great Britain have, each in their turn, possessed, occupied and colonized great tracts of the richest lands of the world. Now has sounded the hour of the advent of German supremacy. The Treaty of Peace which does not secure this end, will not pay our expenses. . . . When Calais is taken, after the capture of Ostend, I fancy that Germany's War Lord will be able to say to the enemy, pointing to the German troops and fleets in the East and in the West : ' And this is what can be done by German force and German will, now you can see and, in future, you will weigh well the consequences before you attack them. Germany asks nothing more from you, not even a refund of her War expenses ; she is sufficiently indemnified by the holy terror she has struck in your breasts by her Autumn campaign. Should you want anything from us, we will not hesitate to resist your demands even if we have to fight again. We will remain in Belgium, to which we will annex the littoral of France to a point beyond Calais. . . . From Calais to Antwerp, Flanders, Limburg, Brabant, all will be Prussian. . . . The Southern triangle with Alsace-Lorraine and Luxemburg, if the latter wishes, will be constituted into a new province of Lotharingia, a State confederated with the German Empire, under the rule of a Catholic princely dynasty. Then will Germany know why she has poured out so much of her blood.' "

Other extracts are given in this part expressing sentiments very similar to those contained in the above paragraphs.

The second part of the first chapter is entitled *Programme de Victoire*, and gives a bird's-eye view of the Germany of the future as depicted by her Professors. The University Professors, Monsieur Pariset reminds us, represent the brain power of Germany. These amiable gentlemen have for many years been proclaiming the hegemony of Germanism in the World. They have adopted Liberty as their battle cry ; the Liberty of the Seas and of the Continents ; a Liberty of the Seas to be secured by *ousting " Albion "* from her present position on the deep waters, for apparently it is her " tyranny " that has prevented German commerce from prospering ; a Liberty of the Continents to be brought about by removing the yoke of Oriental Panslavism and Occidental individualism, in order that all may *freely* enjoy the delights of that *Kultur*—the intellectual gift of Mighty Germany—which will pervade all

Europe, nay will even be diffused throughout the entire Universe. They have promised to bring about an equipoise between the World Empires (Great Britain and America) and a Germanized Central Europe (extending from the latitude of the North Cape to that of the southernmost point of Italy in one direction, and from the Dnieper in the East to the furthestmost point in Western Europe that the power of the sword may put firmly in the Teutonic grasp in the other direction). They have prophesied the spiritual regeneration of the Continent and the creation of a *United States of Europe* under the direction of Germany and under the Presidency of Kaiser Wilhelm II. They have predicted the birth, in the North and in the East, of a Confederation of Vassal States, under the suzerainty of their beloved Fatherland, consisting of the triple Scandinavian Kingdoms with Finland annexed thereto, the Baltic Provinces, a Polish Kingdom carved out of Russian Poland, and Roumania with Bessarabia annexed thereto. At the same time, in the West, they have pictured the continued existence, by Germany's kind permission, of France and the Latin Kingdoms; reduced to a state of impotence these countries are to become fields to be exploited by German adventurers of all kinds. Holland and Luxemburg, they tell us, are to be allowed to divide Belgium between them and as a *quid pro quo* must enter the Imperial Confederation.

Having redrawn the map of Europe, as above, these Professors have turned their thoughts to remoter issues; they have sketched out the tempting prospect of a powerful Economic Empire, stretching from the North Sea to the Persian Gulf and including also some of the former Belgian and French Colonies (*vide* article entitled *Krieg und Volkswirtschaft* (War and Social Economics) by Professor H. Herkner, of Berlin University, published in the *Deutsche Reden in schwerer Zeit* for 26th February, 1915); they have described the victorious march of the Turks and of the Mohammedans beyond the Caucasus into the lands bordering the northern shores of the Black Sea as far as the Crimea, for the purpose of bringing about the *emancipation of the Ukraine and the expulsion of the Russians from these regions*; they have pictured the Black Sea and the Eastern waters of the Mediterranean as two German lakes, the latter under an Austro-Greek *régime* and the former under Turco-Persian management; they have recalled the fact that to the War of 1870—1871, which gave them an Emperor and an Empire, was it due that the German people were able to reach the position of splendour and might attained by them in the midsummer of 1914; they have unwisely dared to prophesy that the present War will bring in a still richer harvest and will secure for Germany that position of pre-eminence in the Universe which is her right, by reason of her greatness and of the might of her military and economic forces.

The views to which the German Professors gave expression during the first six months of the War were intended to represent their own individual opinions and not those of any group or class; nevertheless, the sentiments contained therein tally so closely with one another that no injustice would, it is thought, be done in accepting them as the articles of faith of the whole German nation. The nature of these sentiments can be gathered from the following extract from an article

by the celebrated biologist Haeckel, published in *Das monistische Jahrhundert* for 16th November, 1914:—

"My own personal opinion is that, from the point of view of the future interests of Germany and at the same time those of the Federated European States, the most desirable results to look for from a (German) victory are:—

"1. The crushing out of British tyranny.

"2. The invasion of Great Britain by German forces and the occupation of London.

"3. The partition of Belgium; the greater part (*i.e.*, the Western), as far as the line Antwerp-Ostend, must become a Confederate German State; the north-eastern part should be given to Holland; the south-eastern part with Luxemburg must also become a Confederate German State.

"4. Germany must take over a major part of the British Colonies as well as Belgian Congo.

"5. France must surrender to Germany a part of her N.E. frontier provinces.

"6. Russia must be weakened by the creation of a Polish Kingdom subject to Austria-Hungary.

"7. The Germanic portion of the Baltic Provinces must be reincorporated into the German Empire.

"8. Finland must be constituted an independent kingdom and united to Sweden."

The third part of the first chapter is entitled *L'Europe Sous la Direction Allemande*; therein we are told that Haeckel is the High Priest of a philosophico-religious sect, with leanings towards "Monism." Monism is only the resuscitated form of an extremely old and out-of-date philosophy very familiar to the ancients; indeed, it is but "materialism" under a new title. One of the most notorious disciples of monism is Dr. W. Ostwald, of Leipzig University, the well-known chemist. Before the War his name was also familiar to Frenchmen as one holding extreme views on Internationalism and Pacifism. Since the outbreak of the present War he has placed his views on the future of Germanic hegemony on record in an article entitled *Europa unter deutscher Führung* (Europe under German Leadership) written on the 20th August, 1914, and published in the *Monistische Sonntagspredigten* of the 15th September, 1914. In this article Ostwald states that as the nations of Europe have not been able to live together in peace and harmony by common consent, after this War victorious Germany will compel them so to live by compulsion. His programme provides in the first place for putting an end to the Naval Supremacy of Great Britain, "the greatest enemy of peace in Europe," once for all. He is of opinion that, after the War, the German Army will be so immeasurably superior to those of Great Britain and all the other Powers that each and all of these Powers will give up the idea of maintaining Armies on their own account, and will instead hand over to Germany the task of protecting them from aggression from the East.

When Ostwald wrote his article he appears to have been confident that the Great War would have but one issue; in his view, in the same

way that it was important for the centre of gravity of the military situation in Europe to be located in Germany, so was it equally so that the centre of gravity of the economic situation should also be found in that country. He further opines that the better way of rendering it impossible for any of the Powers to start a War in the future will be for Germany to assume control of the finances rather than the control of the military forces of the world.

Internationalism, which has to all outward appearance been killed by the present conflict, will after the War, says Ostwald, have greater chances, under Germany's direction, of successfully attaining the ends it has been seeking than has ever been the case since its inception.

The fourth part of the first chapter is entitled *Les Conquêtes Futures*, and throws light on some of the schemes of spoliation which have been hatched by the intellectuals of Germany. Dr. Dietrich Schaefer, of Berlin University, was, says Monsieur Pariset, one of the first publicists in Germany to put forward, at the beginning of the War, a scheme of territorial aggrandisement. In an article published in a German Review named the *Panther*, after the gunboat of Agadir fame, Schaefer states most emphatically that it is essential that Germany should strengthen her position permanently in Central Europe. He insists that Germany's power for action should be extended, and particularly so towards the East. As a first step he recommends that Russian territory up to the line of the Dnieper should be absorbed into the German Empire.

He also expresses the opinion that without the destruction of British domination on the seas, and in commerce, there can be no sure peace either for Germany or for the world.

Professor Martin Spahn, of the Strassburg University (a son of Dr. Peter Spahn, Vice-President of the Reichstag), completes the details of the scheme of conquest foreshadowed by Schaefer by making known German designs in Western Europe. He tells us that "it is necessary to reconstitute the frontiers of the ancient great and vast German Empire. Above all else, we must reach the English Channel. After what we have had to endure Belgium must at least cede to us the Congo as ransom; thus will be completed the German Colonial Empire in Central Africa of which we have been modestly dreaming in recent years. Whatever degree of autonomy the Empire may be pleased to concede to the former Southern Provinces of the Low Countries a complete control over them by Germany is essential to her from the political, economic as well as the military point of view. We have occupied Belgium to prevent France from doing so now, it is necessary to continue to occupy this country in order to prevent Great Britain from doing so later. . . . The frontier of France cannot be allowed to remain as at present, but must be marked out further south, where it was, indeed, in the time of Charles V."

Monsieur Pariset points out that at the beginning of the War the German dreams, though optimistic and grandiose, were nevertheless ill-defined; they rested as a pall over the realities of the situation, casting an immense shadow thereon; they pictured the political ideas of Pan-Germanism as a mental attitude; they permitted, however, a

diagnosis to be made of the nature of the madness that had overtaken the German people. It was also evident that the Government, in order to give the fullest rein to the most extravagant expectations, purposely abstained from giving precise details of their aims. The Imperial Chancellor, addressing the Reichstag on the 2nd December, 1914, stated:—"We will hold out to the end, even until such time that we have assured ourselves that no one will again dare to disturb the Pax Teutonica—a peace worthy of a free people, a peace during the course of which German genius and German power will be able to develop themselves and to prosper at their leisure."

Chapter II. deals with the first of the German peace proposals (in 1915); it is subdivided into four parts. The first part is entitled *Les Mémoires des Six Associations Economiques*; in it we are told that in the Spring of 1915 a strong feeling had grown up in Germany that the War had lasted long enough; it was recognized that the German victory in the West was certainly incomplete; on the other hand it was expected that the Germanic successes against Russia (May to September) might be turned to good account in the West in due time. The German Government, however, does not appear to have shared in the illusions then prevalent on the subject among the German people; the former were in no doubt as to the actual condition of affairs and realized that the Entente Powers were far from having been conquered. The German Government, nevertheless, thought it necessary, in order to satisfy public opinion, to put out feelers in the Entente countries on the question of peace without, however, committing themselves in any way whatever. In order to cope with the difficulties of the situation resort was had to an extremely astute procedure—Machiavelian in its conception. The discussion in public of "War aims" was, in Germany, forbidden. However, certain groups, or Leagues, thought to be competent to deal with the subject, were authorized, or may be even invited, to lay before the Imperial Chancellor proposals in connection with the German peace terms. The publication of these peace terms was not authorized, but copies thereof were circulated throughout the Empire. This gave the cue to the Press and created the proper atmosphere in influential circles. Presumably too, suitable arrangements were made for copies of German peace terms to find their way across the border and to become known in foreign countries. The fact remains that the French Press obtained, through Socialist sources *via* Switzerland, and was able to publish the text of the Petitions or Memorials presented to the German Government, so that whilst the documents in question remained *quasi* secret and confidential in the country of their origin, they received the widest publicity in the enemy countries.

The two first of the petitions in question were presented to the Imperial Chancellor by six of the most powerful economic and social Associations or Leagues in the German Empire. The first petition is dated the 10th March, 1915; it contains a formula by which the War can, according to the signatories, be brought to an end by "a peace full of honour, worthy of the sacrifices made and carrying with it the guarantee of its permanence."

The signatories to this petition state that the Fatherland's enemies

are continually announcing that Germany must be crushed and displaced from her position of a Great Power, and they express the opinion that Germany cannot obtain protection merely by signing a Treaty, *since her enemies would pay respect to the terms of a Treaty only so long as it suited them*. They urge that the protection of Germany is to be sought rather by *weakening the economic and military power of her enemies to an extent that will ensure peace for a sufficiently long time*. They continue :--  
 " We realize that it is by the acquisition of a *Colonial Empire* meeting fully the wide economic interests of Germany, by the imposition of guarantees for the *future of her commerce and customs relations*, by the payment to her of an adequate *War indemnity* (secured in a suitable manner) that the *principal objects* of the conflict, which was forced upon us, can be obtained, and at the same time the security and amelioration on the *European Continent*, in the position of the German Empire properly provided for, as explained below :--

" Since it is necessary for the purpose of securing our position on the seas and our military and economic future as against Great Britain, since Belgian territory, economically so important, is so closely associated with our principal industrial centres, *Belgium* must, as regards its monetary, financial and postal matters, be subject to the legislative control of the (German) Empire. Her railways and waterways must be closely connected up with the similar means of communication in our own country. By creating a Walloon District and a preponderating Flemish District and by placing in German hands the undertakings and economic properties of importance, from the point of view of the domination of the country, the Government and administration of Belgium can be organized in such a manner that its inhabitants shall not be able to exercise any influence on the political destinies of the German Empire.

" As to France, having regard to our relations with Great Britain, it is of *vital interest to us*, in view of our future on the High Seas, that we should possess the coastal region of France, adjacent to Belgium, approximately up to the line of the Somme; this will give us access to the Atlantic Ocean. The interior region (which should be annexed at the same time) should have such boundaries that the ports at which the canals end may be made to acquire the fullest importance of which they are capable, economically and strategically. The remaining territorial acquisitions in France, apart from the necessary annexation of the mineral basins of Briey, should be decided upon purely in relation to military considerations affecting strategy. As regards this matter, after the experiences of the present War, it is very natural that we should not wish to expose our frontiers to fresh hostile invasions by leaving in the hands of an adversary the fortresses menacing us, particularly those of Verdun and Belfort, and the Western ramparts of the Vosges, situated between the aforesaid fortresses. By the conquest of the line of the Meuse and the French coast including the outlets of the canals, we should acquire, in addition to the iron deposits of Briey already referred to, the coal regions of the Departments of the Nord and of the Pas de Calais.

" These territorial augmentations will—in the light of the experience

in Alsace-Lorraine—be so arranged, it is presupposed, that the people in the annexed territories cannot acquire any political influence in matters affecting the destinies of the German Empire and that all the economic resources of these territories, including the properties of medium and large extent, shall pass into German hands; France will be called upon to compensate the owners and to absorb them into her own population.

"The consideration which should weigh with us most as regards the East is to provide there, as a counterweight to the anticipated great *industrial development* in the West, for the annexation of an *agricultural region* of equal weight."

The petition goes on to urge that provision should be made for the founding of Great Agricultural Colonies within the Empire by the repatriation of German peasants residing in foreign lands, notably those living in Russia. It is represented also that some provision is absolutely indispensable for the protection of the frontiers of E. Prussia by extending the confines of the German Empire beyond the present Eastern limits of E. Prussia, Posen and Silesia. These Provinces must not be allowed to remain the Marches of the Empire, exposed to attacks as they are at present. The War indemnity, which Russia should be called upon to contribute, must consist in the cession of territory. It is admitted that the nature and extent of the German demands must depend upon the nature and quality of the military successes gained; the signatories are however confident that "our Army and its leaders will win that victory which will guarantee the attainment of all our War aims."

In one of the concluding paragraphs of the petition it is stated: "The want of direct ports (*i.e.*, in German possession) on the English Channel will inconvenience our maritime trade in the future as it has done in the past. An independent Belgium will always be a British bridgehead and *point d'appui* against us. The existing natural defensive line of France, if allowed to remain in French hands, will be a continual menace to our frontier. If Russia were permitted to come out of this War without loss of territory, she would circumscribe our capacity for action and also our power, whilst, at the same time, the non-acquisition of an agricultural region on our Eastern frontier would militate against the possibility of our adding sufficiently to our population for the purpose of providing the necessary increases to the Military Establishments of Germany in order to make provision for combating Russia."

The Leagues that were responsible for framing the petition from which the above extracts are taken certainly cannot be justly charged with having exhibited any reticence as to what they considered Germany's War aims should be.

The second of the confidential Memorials presented by the Economic Associations referred to was issued from Berlin and bears date 20th May, 1915. In it, after some prefatory remarks, the military and industrial reasons for the annexation of French territory are set out. It is stated that all classes of the German people are united in their intention to wage this War to a definite conclusion, in order that Germany may come



out stronger than before so far as her *external relations* are concerned, and further, being provided thus with a guarantee of a lasting peace, that she may be in a position to assure her own economic and intellectual development *within her own borders*. The signatories wish for no premature peace: such a peace, they recognize, *would make it impossible for them to hope for a sufficient reward for their victory!* Nor do they want a *weak* peace, a peace which does not provide for the complete political advantage to be derived from the *decisive military successes* to which they are looking forward. The text of the first Memorial is fully incorporated in the second one. It is pointed out that the annexation of the territories containing iron and coal deposits put forward as a War aim in the first Memorial would not only enlarge the industrial power of Germany, but such an annexation, it is urged, is a prime military necessity for the following reasons:—

"The monthly output of pig iron has, in Germany, increased since the month of August, 1914, to about one million tons, that is to say that it has practically doubled. The manufacture of steel has exceeded one million tons per mensem.

"It is necessary to add that there is no great abundance of pig iron and of steel; not only are we in want of it in Germany, but Neutral States are in still greater need thereof than we are. The manufacture of shells gives rise to demands for iron and steel in quantities far greater than ever dreamt of in former times. For cast-iron shells alone which, though of inferior quality, are replacing cast and wrought-steel shells, the consumption of pig iron has, during the past few months, reached at least 4,000 tons *per diem*. Exact figures are not available. But it can be stated that had not the output of pig iron and steel been doubled since the month of August, it is certain that it would have been impossible to continue the War.

"As a material of first importance for the production of the quantities of pig iron and steel required, 'minette' occupies an increasingly important place, for this mineral can alone be extracted in Germany in sufficient quantities to meet the growing consumption of iron and steel."

It is stated that if anything should occur to hinder the output of 'minette' in the Fatherland the War would, to all intents and purposes, be lost so far as Germany was concerned, and it is suggested that if the fortress of Longwy and the numerous furnaces in the French region were to fall back into French hands and long range artillery were to be brought into action at or near Longwy the furnaces in Germany and in Luxemburg would be brought to a standstill in a few hours: the distances from Longwy to Rodange, Differdange, Esch, Ottange, Rumelange and Dudelange vary from about 4½ miles only to 15½ miles. About 20 per cent. of the pig iron and the steel produced in Germany come from this region. Attention is next drawn to the fact that Jaray (the region of the Phoenix 'minette' mine) is situated at a distance of only 35 kilometres (22 miles) from Verdun, whilst the westernmost mineral deposits of Landres and of Conflans begin at a distance of 26 kilometres (16½ miles) at most from Verdun. It is significantly pointed out that the Germans have been bombarding Dunkirk at a range of 38 kilometres (23½ miles) and the question is asked whether anyone in Germany can

really conceive that, in the next War, the French would neglect to provide themselves with long range artillery and still allow these iron deposits to be worked by Germany?

Such is the argument advanced for depriving the French of the fortresses of Longwy and of Verdun.

The Memorial proceeds:—"The possession of large quantities of coal, and particularly those coals, rich in bitumen, which abound in the basin of Northern France, is at least as important as the possession of iron ore from the point of view of War requirements."

It is pointed out that the prohibition of the export of coal by the British Government (on the 15th May, 1915) clearly shows that coal supplies can be utilized as a most potent political weapon in an international controversy. Neutral industrial States are bound to obey the behests of those belligerents who are in a position to provide them with the fuel they require.

It is stated in the Memorial that Germany has been obliged to exploit the Belgian coalfields in order to provide against neighbouring Neutral States becoming totally dependant for their supplies of this commodity on Great Britain, and the suggestion is put forward that the systematic use made by Germany of Belgian coal has been the reason that some of her neighbours have continued to remain neutral.

The Memorial also calls attention to the fact the products of distillation in the process of converting coal into coke provide the most important ingredients for the manufacture of explosives and also benzol, which is being used as a substitute for benzine in view of the scarcity of the latter.

The second part of the second chapter is entitled *Le Mémorial des M.C.D. Sommités*, and contains the text of the most closely reasoned and the most remarkable of the Memorials presented to the Imperial Chancellor; it was drawn up in Berlin on the 20th June, 1915. The document in question was put into private circulation for the purpose of being signed by leading members of the public. Among those who appended their autographs thereto were Schumacher (of Bonn), Schacter (of Berlin) and Seeborg (of Berlin). There were finally inscribed on the document nearly 1,400 signatures of distinguished personages; 352 being those of professors (of higher education), 252 those of artists and men of letters, 182 those of business men and bankers, 158 those of ecclesiastics and professors (of lower education), 148 those of judges and others connected with the law, 145 those of governmental or municipal officers, 52 those of persons connected with agriculture; some 40 deputies and a number of generals, admirals and diplomatists on the Retired List also attached their signatures to the document. Such then was the constitution of the "*M.C.D. Sommités*"; let us now learn what they had to say to the Imperial Chancellor. They make a good beginning; according to them Germany has never had the intention to increase her territorial possessions in Europe by conquest; she only flew to arms to defend her own *Kultur* and the civilization of Europe against "the barbarians of the East" and "the spirit of revenge and desire for domination cherished by her neighbours of the West." However, they continue: "But to-day a mere defensive attitude is no longer sufficient.

We wish now to continue our existence in an enlarged territory, established so firmly and so spaciouly as to ensure our independence for many generations to come."

They declare that the German people are united in their views as regards what are considered the Essential War Aims; their one fear is lest a premature peace should be concluded. According to them it is not *World domination* for Germany that they demand, rather do they wish to see their Fatherland allowed to occupy in the World that position of importance which is suitable to the magnificence and power of their country's economic and military might. The military achievements of this War, associated as they have been with so many and great sacrifices, must, they urge, be *exploited to the most extreme limits possible*. These limits are set out in their Memorial, of which the following is a summary:—

1. *France*.—The French danger must be wiped out; the French menace and cries for revenge have continued from 1815 to 1870, and from 1871 to 1915 France has opposed with the deepest fanaticism every effort at reconciliation made by Germany. In the interests of the continued existence of Germany, France must be reduced to impotence politically and economically—being in no way spared—in order that the military and strategical position of Germany in relation to her Western neighbour may be improved. The distinguished signatories of the Memorial are convinced that *a considerable rectification of the Franco-German frontier, from Belfort to the sea, is absolutely necessary*; the Germans must conquer a part of the French littoral from a point N. of the Straits of Dover and thence westward along the English Channel, in order to secure Germany's strategical position in relation to Great Britain and in order to give her better access to the High Seas.

In order that a situation analogous to the one which has existed in Alsace-Lorraine, for the past four decades and more, may not be repeated in the new territories to be acquired by Germany, all properties and undertakings in anti-German hands must be transferred into the hands of true patriots; the *original owners must be compensated by France*. No political privileges should be accorded to the present population of the annexed territories.

A heavy War indemnity should be imposed on France, without any mercy, in order to teach her a lesson for her blind attachment to Great Britain during the present conflict.

It must not be forgotten that France possesses a Colonial Empire in extent out of all proportion to her own importance; according to the *Sommites*, if Germany does not help herself to them, these Colonies will pass into the hands of Great Britain.

2. *Belgium*.—Belgium having been conquered by the spilling of so much German noble blood, it is necessary for Germany to continue to exercise control over that country politically, militarily and economically, in spite of any reasons that may be urged in opposition to the adoption of this course. German opinion is unanimous that it is a *question of honour* for Germany to retain her hold on Belgium. Otherwise, Belgium will, it is stated, become, politically and militarily, a base for a British attack on Germany.

Economically Belgium will, it is pointed out, prove a tower of strength to Germany, and her population will, at the same time, be a great military asset, if the Flemish, so akin (it is claimed) to Germans in their culture, will only rid themselves of their artificial Latin wrappings and enshroud themselves in their original Germanism.

The treatment suggested for the present population of Belgium is the same as that proposed in the case of the inhabitants in the French territories to be annexed: they should be granted no political privileges; their properties and undertakings should be transferred to true Germans.

3. *Russia.* The population of the Russian Empire on Germany's Eastern frontier is increasing according to the *Soummités*, at the alarming rate of  $2\frac{1}{2}$  to  $3\frac{1}{2}$  millions a year, so that in a generation 250 million souls would be added to the Russian subjects in this region; this population would constitute a serious danger to the German Eastern flank and be one of the greatest menaces to the future of Germany and to that of Europe. To meet it, a solid rampart against Slavism, it is urged, should be built, and all measures should at the same time be adopted to encourage the increase of German population in this region.

The territories that Russia must be called upon to cede to Germany will form the *rampart and outworks which are to afford the guarantee for the increase of the German population.* It is agricultural lands that Germany wants in this region: *tracts in which a healthy peasant population can be reared, a region which is to act as a necessary counterweight to balance the continuous industrialization and urbanization of the German people,* and to provide, at the same time, colonies for the surplus population of Germany proper and for those of German descent settled in foreign lands who wish to go back to live under the rule of the Prussian Eagle. These tracts are intended to raise a barrier against emigration and to provide for the better housing of the poorer classes. The colonization and Germanization of these tracts are expected to open up new possibilities of employment to the intellectual amongst the proletariat, and, at the same time, to extend the influence of the German ethical and moral code to the East. The suggestion is put forward that a belt of country beyond the borders of E. Prussia, Posen and Silesia, of a depth determined by strategical considerations, should be annexed and made accessible to German colonization. No private ownership of property should be permitted in this belt; among the subsidiary advantages which it is hoped to derive from this belt is the protection of Prussian Poles, so that they may not be brought under the direct influence of the Russian Poles; it is feared that a situation might otherwise be created which would end in a demand for Polish autonomy.

The proposal is put forward to rob Russia of the Baltic Provinces also. The fertile soil of this region renders it a suitable field of great promise for colonization purposes; whilst its population of Lithuanians, of Letts and of Esthonians, sparse though it be, would serve as the race of itinerant workmen of which Germany is so much in need.

A War indemnity must, it is claimed, also be enacted from Russia, in addition to the foregoing cessions of territory. Russia may not be able to pay cash down after this War, but she can well pay in kind. Russia is rich in Crown lands and she should, it is urged, be compelled

to make a grant of such lands, freed from all incumbrances and servitudes, to Germany. This claim, it is suggested, must not be considered as anything out of the ordinary in view of Russian methods of administration; moreover, the Russian people are not so strongly attached to the soil as those of Western and Central Europe.

It is held that to make a peace with Russia which did not result in diminishing the magnitude of the Russian Menace and did not secure territorial conquests, would be to lose the great opportunity for creating a situation tending to favour the rapid political, economic and social recovery of Germany; and thus would postpone to a future date the tussle for a final throw with Russia, *i.e.*, a fresh war for the purpose of securing the existence of Germany and of European civilization would inevitably become necessary.

4. *Great Britain, the East, Colonies and the Distant Seas.*—Although it is principally in the Russian theatre of operations that events, it is pointed out, have been developing so gloriously for the German arms and that measures must still be taken to disperse completely the enormous masses menacing the German Eastern frontier, yet it must not be forgotten for a single moment that, in its ultimate stages, what Germany is in for is a War directed by Great Britain against the former's economic development on the Near Seas as well as on the Distant Seas.

The *motif* of the War and the antagonism of Great Britain, it is urged, indicate what German War aims should be so far as concerns the Island Kingdom. Shortly: in creating a position for Germany in the World there should be secured for her on the Near Seas and on the Distant Seas bases which can be used to the disadvantage of Great Britain.

Germany, it is admitted, has learnt nothing or two by being a blockaded country. Germany must now seek, within her future European territories, more extensive than at present and more effectively protected, an existence free from dependence of any kind on outsiders, particularly so as regards Great Britain and other World Empires which are self-contained. Germany's political friendships with Austria-Hungary and Turkey will throw open to her the Balkans and Asia Minor. German influence must be extended to the Persian Gulf, in order to withdraw Asia Minor and the adjacent regions from the covetous grasp of Great Britain. Commercial relations must be encouraged to the utmost with Germany's political friends.

The opinion is expressed that, in spite of Great Britain's efforts to exclude her, Germany must again take her place as a competitor in the maritime and other commercial concerns of the World. True, many changes will be necessary in Germany's international commercial relations; Germany must be prepared to strike out a course tending to make her independent of other nations, for example, the British intrusion in the money markets must be got rid of, as also British arbitrage contracts and the leading position of British Insurance Companies in matters affecting shipping and transport generally.

The German Colonial Empire must be re-established, but on a sounder and stronger basis. Central Africa will afford a sufficiently wide field for German enterprise. Relations likely to last for many decades must be established with the Islamic World.

Liberty of the Seas is necessary to Germany. It is because this Liberty will be of benefit to the whole world that Germany is fighting Great Britain. It is in order to attain this end that Germany must in the first place establish herself solidly on the French Coast commanding the Straits of Dover.

The chain of British maritime *points d'appui* which encircle the globe must, it is urged, be got rid of or, as an alternative, their value must be negatived by the acquisition by Germany of an equivalent chain of *points d'appui*. As regards Egypt, it is not only a bond between Britain's possessions in Africa and Asia, but these possessions in conjunction with Australasia practically convert the Indian Ocean into a British lake. Egypt is, as Bismarck long ago pointed out, the nape of the British World Empire. It is her hold on this region that enables Great Britain to impose her arbitrary will on the Western as well as on the Eastern World. It is the spinal cord of Great Britain and it must be snapped. If Germany succeeds in her task, the World's great waterway must be liberated from the domination of a Single Power and the ancient rights of Turkey must be restored to her as far as possible.

The power of Great Britain is stated to be derived essentially from the great influence it exercises at Foreign Courts and on the Press of the whole world. From the German point of view the abolition of the British monopoly in matters affecting cable telegraphy and news agencies is most pressingly necessary.

Germany does not wish, it is claimed, to become a Ruling Power whose object is merely to exploit the world, as Great Britain is alleged to do. She aims, on the contrary, at occupying the position of the foreman or pilot of Europe; a position in which, after having provided for her own needs, Germany will respect the Liberty of all other peoples to carry on their own development, and will assure full Liberty to them severally within their own borders.

5. *War Indemnities*.—The demand is advanced for a War indemnity. It is suggested that it should be utilized in connection with the reconstruction of E. Prussia and Alsace, the creation of a Pension Fund for maimed soldiers and the families of those killed in the War, the payment of compensation to individuals for losses out of the ordinary suffered by them, the re-establishment and completion of Germany's armaments.

No sum of money would, it is stated, be too large to exact from Great Britain; it is alleged to be British money that has raised practically the whole world against Germany.

But it is France that must in the first place, if not exclusively, make a monetary contribution as a War indemnity. No sentiments of false pity must be allowed in any way to weigh in the balance; the heaviest possible financial burden must be placed on France.

The signatories in conclusion explain that should they be reproached, owing to the circumstance that many of them are associated with Science, Art and the Church, for putting forward claims in which questions of political, economic and social power occupy the field to the exclusion of the purely intellectual duties of Germany, they have a threefold reply:—

(ii.). Solicitude for the intellectual activities of Germany has nothing to do with War aims and peace conditions.

(iii.). If, however, they are really called upon to say a word on matters affecting intellectual activities, then they would point out that Germany must first be assured of her political and economic existence before she can be free to devote herself to the task of promoting intellectual progress.

(iii.). To those who wish for some kind of intellectual progress divested from the politics of power, that is to say for something in the nature of pure intellectual progress, they would say that Germany has no desire for that form of intellectual progress, one in danger of suffering decay, since this is the kind of progress which is without roots and would falsify the character of the German people, whereas they (the signatories) have put forward claims intended to build up the intellectual progress of Germany on a sound and healthy basis. With Bismarck they would say, "If there is any situation in which faith is capable of moving mountains and in which it is evident that courage and victory do not represent cause and effect, but are one and the same thing, that is the one where politics come into play."

The third part of the second chapter is entitled *Considérants des Mémoires* and contains a justification, by Professor Hermann Schunacker, of Bonn University, of the proposals contained in the Memorial of the *Sommités* to which the preceding part of this chapter is devoted. Professor Schunacker is a much-travelled man; enjoying high distinction, his views carried great weight before the War. The present German Crown Prince was one of his pupils at Bonn. During the War the advice which he has given his Government has not been happy; he has been very much astray in his premises regarding matters connected with the War. The following are some of his recorded views:—

*Belgium.*—"We have need of Belgium in order to protect Germany against Great Britain and in order to protect the World and Colonial trade of Germany. The possession of Belgium will at a later date facilitate the attack by Germany on Great Britain. Since the latter kingdom is an island, we can only attack it with difficulty from land, but Great Britain is vulnerable on the sea. If we station at Zeebrugge or further west, at the entrance to the English Channel, squadrons of submarines, of destroyers and of aeroplanes, we shall also acquire something akin to that insular power that Great Britain monopolizes."

(The Professor then proceeds to recommend that Belgium and Luxemburg should be hedged in by a Customs barrier, so that Germany may not suffer from any commercial policy that may be inaugurated in Belgium; that Germany should retain a strong hold on the Belgian railway system so as to prevent commercial competition between Belgians and Germans; that the social laws of Germany should be brought into force in Belgium; that the internal affairs of Belgium should be managed separately from those of Germany, but under a parliamentary régime similar to that of the Fatherland.

"It is by the régime instituted in Belgium," he tells his countrymen, "that we shall fortify ourselves against Great Britain and not otherwise."

*England and Colonies.*—Professor Schumacher opines that "the issues of the War, so far as Colonies are concerned, rests on the control of the great maritime route which, skirting the British coast, traverses the Mediterranean, the Suez Canal, and the Red Sea, whence tracks radiate towards India, Australia, the Far East, rather than in the Colonial possessions themselves." He complains that Great Britain maintains her commercial supremacy by dominating this great commercial highway along which she has posted her sentinels. He admits that it will be a difficult task for Germany to oust Great Britain from her position, but the preparation of schemes to attain this end must nevertheless not be neglected. When certain French, Italian and Turkish ports are in German hands, the time will have arrived to deal with British commercial supremacy and to bring about a measure of equality in this respect between the several Powers.

*France.*—"All our Western frontier, from south to north," says Professor Schumacher, "must be improved as much as circumstances will allow. It is none the less necessary to take care of those industries which are connected with the preparation for war. Above all things, we must make sure of getting hold of all materials which are a prime necessity in connection with the manufacture of munitions and to deprive our enemies of the same." It is pointed out that, thanks to the 1870 War, Lorraine, with its mineral wealth, passed into German hands. However, the geologists consulted by Bismarck had not exact information regarding the stratification of the old frontier region and in consequence the Longwy Basin, one of the richest parts of France, was allowed to remain in French hands. Professor Schumacher continues: "To-day, we can correct this mistake, for we have been in occupation of this mining region since the beginning of the War and still hold it firmly in our hands."

Turning to another aspect of the situation, it is pointed out that coal is the second material of prime importance in connection with the manufacture of munitions. On this ground, Professor Schumacher urges that the coal regions of Belgium and of Northern France should be annexed by Germany; "to give back to the enemy these sources of military and economic power, which the sword has put in our hands, would be," he says, "an act opposed to the vital interests of our people, as affecting the situation both in times of war as those of peace."

Since the Professor's views on the general German War aims correspond so closely in matters connected with territorial acquisitions with those contained in the Memorials of the six Associations or Leagues and of the 1,400 distinguished leaders of the learned callings referred to earlier, it is perhaps not surprising that in the matter of the War indemnity to be exacted in hard cash from France he too should urge that Germany should not hesitate in putting in a demand in this respect up to the *extreme limit*.

Schumacher's views, of which the above are but a summary, have been published in the *Berner Tagwacht*; a French translation of the text appeared in *Le Temps*, 28th August, 1915.

The fourth part of the second chapter is entitled *Déclaration des Partis Bourgeois* and sets out the views of the German middle classes which,



although divided as regards their political creeds, are, nevertheless, united on the subject of War aims. They express themselves as full of admiration, of joy and of gratitude to the German troops and their Allies, in that they have safeguarded Germany from the trials of an invasion by their victorious and uninterrupted march far into the interior of the enemy's countries. They tell us that they are waiting with quiet resolution, and with confidence in the Almighty, for the day on which peace negotiations will lead to guarantees being provided for the protection of the military, economic, financial and political interests of Germany on a lasting and widespread basis, *including therein the necessary increases of territory.*

W. A. J. O'MEARA.

[The Review of the remaining Chapters of the number are held over for want of space. Ed., R.E.f.]

## NOTICES OF MAGAZINES.

REVUE MILITAIRE SUISSE.

No. 7.—July, 1917.

THE ITALO-AUSTRIAN THEATRE OF OPERATIONS (*continued*).

The text is accompanied by reproductions of photographic views of military interest, and by a sketch map showing the Austrian defences on the Carso, E. of the Vallone.

During the spring of 1917, it was on the Monfalcone-Gorizia front that the most important of the Italian battles were fought. The Italian right rested at that time on the Lisert Marshes (situated S.E. of Monfalcone, near the borders of the Adriatic); it extended northwards along the heights E. of Pietra Rossa-Mount Debeli to a point W. of Oppacchia, and thence by Vertoiba, where a marked re-entrant occurred, and Hill 174 to a point E. of Gorizia. From the last-named place, the Italian front ran along the right bank of the Isonzo to a point S. of Plava, which was in Italian hands, where it crossed to the left bank of the river.

At many points the enemy held positions commanding the Italian line, whence they could bring enfilade fire to bear along them. The Comen plateau E. of Castagnevizza is a particularly difficult region in which to carry on war; it is bordered on its south by the formidable position of the Hermada. Troops operating on the plateau have their northern flank exposed to attacks from the north and run the risk of being driven into the sea. The Austrians had had ample time given them in which to entrench themselves, and they took full advantage of this respite to strengthen their positions; these were naturally formidable.

The country round Gorizia is commanded by the positions of S. Gabriele and Monte Santo. The general configuration of the country was such as to give the Austrians an advantage and for this reason surprise has been expressed, in some quarters, that they did not play the rôle of attackers, instead of leaving it to the Italians. However, it has to be remembered that an Austrian offensive undertaken in the Isonzo region alone would easily have been checked by the Italians. On the other hand, the re-capture of Gorizia by the Austrians would undoubtedly have had an exceedingly good effect, and would, at the same time, have enormously raised the *morale* of the victorious troops.

At the northern extremity of the Sector, hills, of which Monte Cucco is the centre, rise as a rampart to the Isonzo. On a front of about 4,000 yards, the steep slopes descend abruptly to the river, some 1,500 feet below the hilltops.

The Italians continued to hold on to Plava, under difficult conditions,

Val Sugana. The Italians were not to be thus deceived. There was fighting also on the Pasubio region.

On the 23rd *idem*, on the eve of the anniversary of the declaration of war between Italy and Austria, the Italians took the offensive on the front between the sea and the Frigido. The Austrians were estimated to have 100,000 rifles on this front. The artillery bombardment only lasted 10 hours. The attack was delivered against the Austrian centre (Jumiano-Flondar) and left. Ten British batteries of medium guns and the Italian fleet participated in this attack. A great aerial fight also took place, in which 130 machines of various kinds took part. In the centre, the Italians penetrated the Austrian defences as far as the line Jamiano-Lucati. Boscomulo was surrounded and fell into Italian hands, in spite of the formidable nature of its defences. On the extreme right, the Italians advanced beyond the outskirts of Monfalcone and captured Hill 21. On the 24th *idem*, the Italians made a vigorous push and penetrated the Austrian position as far as Versic and Flondar. On the following day, the Italians passed beyond Flondar and threatened S. Giovanni at the foot of the Hermada. On the 26th *idem*, the crest of the Medeazza was threatened and the Italians captured Hill 145. By the 27th *idem*, the Italians had reached approximately the line S. Giovanni-Castagnavizza.

During the 15 days that the battle raged, the Italians claim to have captured 23,681 prisoners, including 604 officers, also 36 guns and 148 machine guns. Although the Italian success was not decisive, it brought them a step nearer their objective.

The Austrian counter-offensive, which had been prepared behind the line of the Hermada and Terstel terraces, was launched on the 24th May. At this time the Italians were threatening Hermada and were barring all the routes into the Vallone.

The Italian operations followed, in their general outline, the plan which had been adopted by them in 1916, and which had given them the Carso and Gorizia.

#### NOTES ON MACHINE-GUN FIRE.

##### *Traversing Fire.*

The author of the original article points out that in the case of machine-guns apart from the fire with both clamps firmly tightened up, known in Germany as *Punkfeuer*, which is used for the purpose of adjusting or verifying the setting of the sights, or against a small target, all other forms of machine-gun fire are really *traversing fire*. According to his definition whether the gun is traversed horizontally, vertically or diagonally, or whether a certain zone in depth or a certain zone in width is brought under fire, these all constitute *traversing fire*.

The original article enters into certain details in connection with the methods of handling the machine-gun used in Switzerland; no particulars of the gun itself, however, are given. It is stated that all are agreed as to the method to be employed in the cases of horizontal and vertical *traversing fire*, viz.:—One clamp must be tightened up whilst the other is left just *sticky*. There are, however, four methods, it is suggested, of dealing with the problem of *diagonal fire*, each having its own partisans; these methods are as follows:—

1. A series of grouped shots or the so-called "searching in echelon." By this method of fire the advantages possessed by the machine-gun as an automatic weapon are largely lost. The material damage done by a machine-gun by this method of fire is no more than that which a few good rifle shots can produce; whilst, so far as moral effect is concerned, the advantage appears to be with the riflemen.

2. Fire from a diagonally placed tripod so that the whole target can be covered without change of elevation. This method gives very good results, but can only be used for a fixed range, having a uniform slope.

3. Fire with both the traversing and elevating clamps *sticky*. In this method both hands are continuously required for manoeuvring the gun on its tripod and the firing trigger is worked by the right thumb. This method presents many difficulties and great skill is required to produce good results.

4. Fire with the clamps loosened. Both hands are employed in this method for directing the gun on to the target in a manner similar to that required in handling a punt-gun. The author of the original article states that he has never seen this method taught; the view seems to prevail that in handling a machine-gun in this way the vibration is too great to enable the gun-layer to keep his weapon steadily trained on to the target. His own experience goes to prove that this method is preferable to the three preceding ones mentioned by him. In order to obtain good results by this method it is alone necessary to see that the tripod is firmly fixed in the ground and to make sure that the firer has good supports for his elbows; the latter requirement is essential.

In the case of *traversing fire* on a wide and deep zone, methods also differ. The first method consists in searching laterally, step by step, along the whole front, using a different elevation at each successive step. Good results can be obtained by this method, if sufficient time is available.

The second method also consists in searching laterally, the right hand being utilized for swinging the gun horizontally, whilst the left hand is used to work the elevating wheel, in such a manner as to cause the muzzle of the gun to sweep out the infinity sign ( $\infty$ ) in space during a complete traverse from the central position; good results can be obtained, but the method is not recommended.

In the case of this kind of *traversing fire* the author of the original article also expresses a preference for the punt-gun method of handling the machine-gun. This method possesses, in his opinion, advantages too where the target is a column of troops on the march and where it consists of troops drawn up *échelon-wise*.

#### THE RUSSIAN CAMPAIGNS OF 1914—1916.

The author of the original states that his principal sources of information are drawn from the *International Military Digest* and the *Journal of the U.S.I. of India* (article entitled *Twelve Months of the War on the Eastern Front*).

In the first days of August, 1914, Russia concentrated on her western frontier some 1,500,000 men, one-third along the Prussian portion of this frontier and the remainder along the Galician frontier. Austria had about a million men in Galicia, so that the opposing forces were

about equal on this section of the frontier. On the northern portion of this frontier the Russians had an overwhelming superiority and yet whilst they were beaten hollow on the Prussian frontier, they nevertheless won a decisive success against the Austrians.

The Germano-Austrian plan of campaign provided for a knock-out blow being struck, in the first instance, against France, and in consequence very few German troops were left in Eastern Prussia. To meet this situation, it was intended that the Austrians should create a diversion by launching an offensive against Warsaw from the south; it was hoped that this would draw the Russian reserves to this region. Had France been disposed of as easily as was hoped would be the case, the next move of the Germans would have been to strike a decisive blow at the Russian troops in Poland.

The intentions of the Russian General Staff are still obscure. They seem to have planned a simultaneous invasion of Prussia and of Galicia. It is difficult to say whether Vienna or Berlin was the first objective assigned to the Russian Armies, or whether both of these places were, or whether neither of them was. It would appear that the intention was to occupy as much enemy territory as possible S. and N. of the Poland Salient, in order to rectify the frontier and to have as wide a front as possible from which to operate according to the developments of the situation. The troops mobilized on the Russian western frontier were not sufficient in numbers to carry on a vigorous offensive against both enemies.

The author of the original paper expresses the opinion that Russia's best course, at the beginning of the War, would have been to remain content to observe the small German Army in Prussia only, which was at that time incapable of operating at a distance from the Prussian frontier, with two or three Army Corps. Had she done so, an additional 300,000 to 400,000 men would have been released for operations against the Austrians, who might have been decisively beaten before assistance could be given them by the withdrawal of German troops from the Belgian theatre of operations.

The million Austrian troops in Galicia were organized in three Armies of about equal size, viz.:-

The II. Army (Aufenberg) was on the extreme right, E. of Lemberg and faced E.N.E.

The I. Army (Dankl) was at Przemyśl, in the centre and faced N.

The III. Army (Archduke Joseph Ferdinand) was on the left, near Cracow, and faced N.E.

On the 10th August, 1914, the two latter opened an offensive campaign simultaneously; the I. Army moved along the right bank of the Vistula, on Cholm-Lublin, the III. Army along the left bank of the same river, on Sandomir-Kielce. The latter Army was, owing to the configuration of the frontier, several marches in rear of the former. The II. Army remained on the defensive. The Russian troops S. of Warsaw were also organized in three Armies of about equal size.

The 1st Army (Ivanoff) was on the right, on the line Lublin-Cholm, facing S.

The 2nd Army (Roussky) was in the centre, based on Dubno, facing W.S.W.

The 3rd Army (Broussiloff) was on the left, E. of Tarnopol, facing W.

The Poland Salient was practically unoccupied. The brunt of the first attacks was borne by Ivanoff's Army; it held its ground.

On the 22nd August, 1914, when the Austrian offensive was still very far from its first objectives, the Russian 2nd and 3rd Armies simultaneously struck a vigorous blow at Auffenberg's Army, which recoiled under the shock.

Between the 27th August and 2nd September severe fighting was in progress on the line of the Guita Lipa, between Busk and Halicz. Auffenberg's right wing was driven back near Halicz, and retired in disorder to positions behind the line of the Dniester, losing 70,000 prisoners and 200 guns.

The main body of Auffenberg's Army, which was now in danger of being cut off from the south, was obliged to evacuate Lemberg. It was reinforced by troops withdrawn hastily from the III. Army, and offered, during the first half of September, a stubborn resistance on the line Grodek-Rawurska.

At the same time, Ivanoff assumed the offensive and slowly pushed back Dankl towards the south. From the 15th September, the Austrian retreat became general. Eight days later, Przemyśl was invested by the Russian 2nd and 3rd Armies, whilst Ivanoff pushed in further westward until he reached the line of the Wisłoka. The Austrians were driven back on to the Carpathians and on to Cracow. In spite of the relative weakness of the Russian forces, their offensive in Galicia was brilliantly successful.

In E. Prussia, the Russians set in motion two armies, each 250,000 strong; the Army of the Niemen (Rennenkampf), which was near Kovno, facing W.; the Army of the Narew (Samsonoff), which was between Ossowicz and Warsaw, facing N.W.

Simultaneously with the Russian attack in Galicia, the Armies of the Niemen and Narew invaded E. Prussia concentrically.

Hindenburg, with only four German Army Corps, opposed half a million Russians. By clever manœuvres, similar to those of Napoleon in 1814, he penetrated between the two hostile armies and beat them successively.

From the 26th to 30th August, Samsonoff, who had become entangled in a region cut up with lakes and marshes, suffered successive checks in the Tannenberg District and was decisively beaten. If German reports are to be relied upon, 90,000 Russians were taken prisoners at Tannenberg. Having beaten the Army of the Narew, Hindenburg turned against the Army of the Niemen, which had reached the Friedland-Angerburg region. Rennenkampf, avoiding a decisive action, retired in great disorder on to the Niemen, leaving large numbers of prisoners and about a hundred guns in German hands.

At a time when the Russians were investing Przemyśl, the remnants of their Northern Group of Armies were seeking shelter behind the Niemen and the Narew.

Whether it was due to incapacity, carelessness or treason is not clear, but the fact remains the Russian offensive in E. Prussia, which from outward appearances had every prospect of success, failed miserably.

The Russians attempted later to explain away their failure in E.

Prussia, by attributing to their operations the character of a raid on a large scale; this explanation can, however, deceive no one.

In spite of this check, the Russian operations in August and September, 1914, were on the whole successful. Their principal Armies had defeated the principal Austrian Armies and had conquered nearly the whole of Galicia. Hindenburg had not been able to follow up his success; he had attempted to cross the Niemen on the 25th and 26th August, near Rodno, but the Russians had had no difficulty in checking him.

Towards the end of August, either in accordance with a premeditated plan, or because of bad news from Galicia, or by reason of over-elation at their victories in Lorraine and in Belgium, the Germans began to push fresh troops into their Eastern theatre of operations. These troops arrived too late to prevent the Austrian *débâcle*, but early enough to have their revenge. Towards the end of September, nearly a million Austro-Germans had been collected on the front Thorn-Cracow, having on their flanks Hindenburg's original Army in E. Prussia and the remnants of the Austrian I. and II. Armies in the Carpathians.

On the 28th September, two German Armies invaded Poland; one marched *via* Lodz on Warsaw, the other *via* Kielce against Ivangorod. According to the German reports the Army on the left consisted of five Army Corps, that on the right of seven Army Corps. In rear of these two Armies great numbers of troops were being collected on the line Cracow-Thorn.

The Russians were to some extent unprepared for meeting the German offensive, and had temporarily to fall back on to the defensive. Had they not carelessly sacrificed so large a part of their force in E. Prussia, they might have had sufficient reserves in hand not only to continue their offensive in Galicia, but also to ward off the German blow against Warsaw.

The thrust of the German Army of the North carried the Teutons beyond Lodz and they were not brought to a halt till the 20th October, when they were but half-a-day's march from Warsaw. The Germans had, however, to retrace their steps to the frontier, since the Russian cavalry now succeeded in penetrating into E. Prussia N. of Kalisch. The Austro-German Southern Army, starting from the region to the N. of Cracow, rapidly reached the neighbourhood of Sandomir and Ivangorod, but was unable to cross the Vistula. Towards the end of October, it also had to retrace its steps to a point W. of Kielce.

To meet this German offensive, the Russians had been obliged practically to evacuate Galicia. The Austrians at Cracow and in the Carpathians having assumed the offensive, the Siege of Przemyśl was raised. The main object of the German offensive may have been to achieve this end.

In November, the Germans again took the offensive. This time, the stroke was delivered from the region of Thorn, where 12 Army Corps had been collected under Mackensen. Their objective was Warsaw.

The Russians appear at this time to have intended to launch a big offensive themselves from W. Poland against Thorn and Breslau. However, the Germans had stolen a march on them. After alternating successes and failures, the Russians had eventually to evacuate Lodz (6th December). At the end of December, they were back on the

Rawka and the Lower Bzura, a day's march from Warsaw; they held on to these positions till July, 1915. ●

The Germans had not yet succeeded in definitely smashing the Russian offensive.

Whilst Mackensen was frittering away his forces at Warsaw, new Russian Armies had once more invaded Galicia, reinvaded Przemyśl, occupied several passes in the Carpathians, and conquered Bukovina. They were also threatening both Cracow and Hungary.

After a desperate effort the Austrians succeeded, during December, in regaining the Carpathians and in temporarily removing the danger of an invasion of Hungary.

At the end of 1914, the advantage still remained with the Russians, who still held the majority of the passes in the Carpathians, and were therefore in a position, when the climatic conditions would allow, to debouch either into Silesia or into Hungary; they had also checked all enemy attempts against Warsaw, Grodno and Kovno.

In January, 1915, the Russians made considerable progress on both wings: in the N. of Poland towards Mława, and in S. of the Bukovina as far as Kimpolung and Kirlibaba. ●

At this time the Austro-Germans had 50 Army Corps on the Russian front: approximately 12 of them in E. Prussia, about the same number in Poland and the remainder in W. Galicia and on the Hungarian frontier.

In the depth of winter (23rd January), the Austro-Germans in Galicia and in Hungary made a vigorous effort to reconquer the Carpathian passes and to relieve Przemyśl. With their right they succeeded, after hard fighting, in regaining, towards the end of February, the whole of the Bukovina and in reaching the Dniester. In the early days of March, the Austrian advance in this sector was brought to a halt by a vigorous Russian counter-offensive. During this time, the Austrian Centre and Left, after a few initial successes, exhausted themselves in vain efforts to debouch from the Carpathians into the Galician plain. Przemyśl, with its garrison of 120,000 men, capitulated on the 22nd March. Simultaneously with the Austrian offensive, the Germans attacked W. of Warsaw, but without success.

To the N. of the Vistula in the region of Prasnitz and of Malawa, fighting had continued during February and part of March. Finally, the Germans had retired on to their own frontier.

On the whole the situation seemed to be still favourable to the Russians, but a storm was brewing where least expected.

The Austro-German offensive of February was probably undertaken with the object of raising the Siege of Przemyśl and of effecting the capture of Warsaw; it is quite possible that these were subsidiary operations intended to mask the main offensive, which was being, at the date in question, prepared E. of Cracow for the purpose of obtaining a decisive result.

The Russians now made another attempt to reach the plains of Hungary. Between the 19th March and 21st April, 1915, violent encounters took place at the Passes of Dukla, Lupkow and Uzsok. The Russians had local successes, took prisoners, but were unable to break through the mountain barrier; it is possible that they wished only to strengthen their positions but not to leave the mountain fastnesses. The



enemy, however, were much alive and on the 2nd May, after a three days' bombardment of unheard-of intensity, the Austro-Germans pierced the Russian positions on the Dunajec, E. of Cracow. Following up their successes they recaptured, one by one, the passes in the Carpathians, next Przemysl, then Lemberg, and pushed back the Russians almost to the positions occupied by them during the first days of the War.

At the end of April, the Austro-Germans had nearly two million men on the Russian front. Of these, about one million were echeloned from the shores of the Baltic to the N. of Cracow; the remainder were in the Cracow region, in the Carpathians and in the Bukovina. The million men last referred to were organized into five armies:—

The IV. Austrian Army (Archduke Joseph Ferdinand) and the XI. German Army (Mackensen), totalling some half million men, were extended on a 50-mile front E. of Cracow and faced E.

The III. and II. Austrian Armies (Boroevic and Boehm-Ermolli) and the German Army of the South (Linsingen) were in the Carpathians, and faced N.N.E.

A sixth Army (Austrian) under Pflanzer was in the Bukovina.

The Russians in this region were at this time disposed as follows:—

The 3rd Army (Radko Dimitrieff) near Cracow; the 8th and 9th Armies in the Carpathians and the Bukovina.

The group of Armies under Ivanoff comprised 14 Army Corps (some 500,000 to 600,000 men), of which about one-third were on the Dunajec.

The Germans it will be seen had succeeded in establishing the main condition for securing success, a superiority of numbers at the decisive point. They also possessed superiority in the matter of artillery and supplies of all sorts.

The 3rd Russian Army was attacked simultaneously by the Archduke Ferdinand and Mackensen; being outnumbered in the proportion of 2 to 1, it was unable to parry the blow. At the very beginning of the attacks Mackensen pierced the Russian line at Gorlice. For a whole week the Russians were able to fall back from one river line to another, approximately parallel to it, without becoming seriously broken up. But the Austro-German pressure in the Carpathians now began to make itself felt, and the Russians thereupon accelerated their retirement, drawing into the movement their troops, which were at that time N. of the Vistula. One after the other the passes in the Carpathians fell into the hands of the Austro-German troops. The Russian left was being continually threatened, and it was thus compelled to retire continuously. On the 3rd June, one month after the opening of the offensive, the Austrians re-entered Przemysl; three weeks later they reached Lemberg. It was on the Austrian right wing only that little progress was made, Pflanzer remained on the right bank of the Dniester, to the N. of Czernowitz. The Russian line from being convex to the enemy had become markedly concave. At the end of June, it ran along the Dniester and Zlota-Lipa, *via* Sokal, to Josefow, where it crossed the Vistula and connected up to the E. of Ivangorod with the Russian front in W. Poland, which had remained stationary on the Rawka-Busra.

During the early days of July the Russians drove the Archduke Ferdinand back from Lublin on to Krasnik.

On the 11th July, the campaign in Galicia came to an end, but the

Austro-German offensive continued. The object of the Central Powers was now nothing less than the conquest of Poland, Podolia, Volhynia, Lithuania and Courland. They wished to exploit their success in such a manner as to wipe the Russian Armies out of their reckoning for many months to come. They had, however, now to deal with an additional enemy; Italy had declared war on the 23rd May.

Even before the big offensive in Galicia, the Germans had boldly pushed into Courland (end of April). They had reached Libau and threatened Mittau, but towards the middle of May they had been obliged to withdraw their forces to some extent; Libau, however, remained in their possession.

At the time when Mackensen's offensive had come temporarily to a halt near Lemberg, Hindenburg made a thrust, with considerable forces, on the whole front Libau-Ivangorod. A few days later Mackensen also moved forward.

The Russians were driven back from the Narew and then from the Rawka-Busra. On the 28th July, the German Army under Von Woyersich forced the passage of the Vistula between Warsaw and Ivangorod. The Russians evacuated Lublin on the 31st July and Warsaw on the 5th August.

At the same time, the Germans threatened Riga by land and by water. On the 2nd August, they occupied Mittau; the German Fleet, however, cleared from the Gulf of Riga on the 20th August, after having suffered heavy losses.

Further south the German advance continued, but without the attainment of the end sought. The Russians retired slowly, with heavy losses; at the same time, however, inflicting considerable casualties on the enemy.

The Germans captured the fortress of Novo-Georgievsk on the 20th August, six days later they occupied Brest-Litowsk and Grodno on the 2nd September.

At the beginning of September the Archduke Nicholas was transferred to the Caucasus and the Czar personally assumed the functions of Generalissimo on the Russian Western Front, whilst Roussky remained in command of the Northern Sector.

From this time, the Russian thrusts became increasingly more intense, particularly in the Southern Sector. On the 7th September, the Russians delivered a strong offensive stroke in Galicia, capturing 20,000 prisoners in a few days.

The Germans fell back on the defensive on the Southern Sector, whilst continuing their offensive with very large forces in the Northern Sector. Their object seems to have been to break through the Russian front and to envelope the divided portions of the enemy's Army. They, however, failed to attain their ends. Their attacks failed both in the Riga region as well as at Dwinsk. Further south, they captured Vilna and Pinsk, but at a great sacrifice. The Russians claim to have taken 50,000 Austrians and Germans prisoners during the month of October.

At the end of 1915, the German offensive came definitely to an end. The Russians now attacked in their turn in the Bukovina, then on the Stry and in the Pinsk region. They made ground here and there, but they were not able to pierce the Austro-German line. During the

early days of 1916 nothing important happened; the Austrians, however, lost the bridge-head of Uscievsko, on the Dniester.

On the 4th June, the Russians suddenly and unexpectedly launched a strong offensive along the southern part of their front, from the Pripet Marshes to the Roumanian frontier; at this time the Germans were firmly held in the Franco-Belgian front and the Austrians on the Trentino front. Broussiloff was in command and all went well at first.

The fortress of Lutzsk was recaptured on the 6th June, that of Dubno on the 10th *idem*; 35,000 prisoners also being taken. Czernowitz fell to the Russians on the 17th *idem*. The Russians claimed to have taken 170,000 prisoners in a single fortnight. The Austrian centre in the Tarnopol region continued to hold out. German reserves now began to arrive at Kowel on the German extreme left, and counter-attacked vigorously. The offensive on the extreme Russian right near Kowel was checked at the end of the month. It was only towards the middle of July that the Austrian Centre gave way and began to retreat. During this time, the defences of Lemberg were organized; the Russians failed to capture this place. The Austrians now took up positions on the Gnita Lipa, the Narajowka and the Zlota Lipa.

During July, the Russians launched a series of offensives, as diversions, in the Northern Sector, in the Riga and Baranowitchi regions; this seems to indicate that their operations in Galicia had commenced to flag. In August, however, the Russian offensive spirit revived and considerable progress was made by them in this region. Their Armies re-appeared in the Carpathians, in the Bukovina, at Jacobeni, Kimpolung, and Kirilibaba, but they were still unable to gain the plains in the South. In the West the Russians captured Kolomea, Nadinorna, and Stanislaw. Their enterprise against Halicz failed definitely in September.

After three months fighting, Broussiloff's great offensive came to a standstill without having obtained a decisive result, although it was by no means entirely abortive. To it was due the fact that the Austrian offensive in the Trentino was checked; the Franco-British push in the Somme was also materially assisted by reason of the occupation found for German troops in the Eastern theatre.

Since that time, the Russians have not done very much. When the Roumanians came into the War as belligerents, it was quite expected that Russo-Roumanian Armies would over-run Hungary. But, for some reason still unexplained, things have gone awry and the only help Russia has been able to give her southern neighbour has consisted in the assistance which enabled the broken remnants of the Roumanian Army to make good their retreat towards the frontiers of Bessarabia.

Since the Revolution in March last, the Russians have only once assumed the offensive, namely on the 1st July.

#### NOTES AND NEWS.

*Switzerland.*—A special correspondent states that Ex-Councillor Hoffmann had the reputation of being a friend of General Wille, but otherwise he had no other friends in the Swiss Army, which in no way regrets his departure from the Ministry. He was elected to the Federal Council on a retrenchment ticket and he cut down the military budget in order to satisfy those who had raised him to high office. Hoffmann

is held responsible for the deficiencies of all kinds in the Swiss Army brought to light in 1914.

Hoffmann's unpopularity in the Army was increased by reason of his attitude in connection with the dropping of bombs on Porrentruy by German aviators. He unjustly allowed an unfavourable impression to be created concerning the acts of Swiss officers who had simply done their duty on this occasion.

M. Ador, who succeeds Hoffmann, appears also to be an *Economist*. His last act, before elevation to office, consisted in an invitation to the Federal Council to deal with the question of a reduction of the military budget, and more particularly in relation to the vote for fortifications. His wisdom on military subjects is much questioned.

The Chaux-de-Fonds incident is closed. The six battalions which had been quartered in this town have been provided with accommodation elsewhere.

*United States of America.*—A special correspondent contributes some notes on "The Emergency Army Bill," signed by President Wilson on the 18th May last, establishing the principle of compulsory service in the United States. The delay (of 50 days from the date of the declaration of the war) in getting this Bill through Congress was not entirely due to the obstructive tactics of the pacifists. Many subsidiary matters, such as the sale of intoxicants, the formation of a division under ex-President Roosevelt, &c., gave rise to a large number of resolutions, involving amendments which came in for a good deal of discussion.

The main features of the Bill are as follows:—

1. *Composition of the Army.*—The regular army is put on a war footing. The National Guards of the various States may, at the discretion of the President, be incorporated into the National Army. Half a million of men—between 21 and 30 years of age—are to be raised at once as a first levy by the drawing of lots. The President is also authorized to raise a second levy of half a million.

2. *Volunteer Divisions.*—Four Divisions (infantry) are to be specially raised wholly by voluntary enlistments—minimum age of recruits for these divisions, 25 years.

3. *Recruiting.*—No bounties are to be paid to recruits, whether volunteers or conscripts, and no substitution is to be permitted. Voluntary enlistment is to be open to males over 18 and under 41 years of age.

4. *Exemptions.*—The following are wholly exempted from military service:—Vice-President of the Republic, members of Cabinet, members of Congress and local Assemblies, clergy of all persuasions, and theological students. Those whose religious tenets forbid the shedding of blood are to serve in the departments of the Army. The President may exempt municipal officials, munition workers, sailors, heads of households, etc.

5. *Officers.*—In the event of a deficiency of officers on the active and reserve lists temporary commissions may be granted subject to confirmation by the War Minister.

6. *Measures Relating to Enforcement of Conscription.*—Every male within the prescribed ages must register by the given date; penalty for failure one year's imprisonment. Foreigners must comply with this

law. Local Commissions decide who shall serve and who shall be exempt. An Appeal Tribunal is set up.

7. *Standing Provisions.*—In addition to M.G. Companies forming part of the several Corps, the President may raise three extra M.G. Companies per infantry and cavalry brigade and four divisional companies per infantry and cavalry division. The President has power to appoint officers of all grades up to and including those of Colonel's rank; promotion to General's rank remains in the hands of the Senate.

8. *Increase of Pay.*—The pay of all grades receiving less than 21 dollars per mensem is increased by 15 dollars; rates of pay above 21 dollars and below 45 dollars are increased according to a decreasing scale. The pay of a private is doubled; *i.e.*, it is raised to £66s. per mensem.

The 5th June was fixed upon as the last date by which all must register. Seven million names approximately have been entered on the registers. The first levy was not to be called up before September. Nine regiments of engineers were raised at once; they consist entirely of volunteers and were to be sent to France as early as possible for railway work, etc.

The National Guard is still much below establishment; on a War footing it amounts to 402,965 men, distributed as follows:—Infantry, 144 regiments; Cavalry, 16 regiments; Field Artillery, 48 regiments; Engineers, 16 regiments; Signallers, 16 battalions; Flying Corps, 15 squadrons; Coast Artillery, 212 companies; "Coast artillery supports," 1 battalion.

The old regular army on a war footing consists of:—4 Infantry Divisions (Continental organization), 2 Cavalry Divisions, 1 Division in the Philippines, Panama zone troops.

The Conscript Army is to comprise the following:—16 Infantry Divisions, each of 913 officers, 27,443 O.R.; 16 Divisional Hospitals, each of 24 officers, 222 O.R.; 64 Field Dressing Stations, each of — officers, 2 O.R.; 2 Cavalry Divisions, each of 607 officers, 16,021 O.R.; 2 Cavalry Divisional Hospitals, each of 24 officers, 238 O.R.; 6 Cavalry Field Dressing Stations, each of — officers, 2 O.R.; Medical Services, 288 officers, 1,000 O.R.; Coast Artillery, 666 officers, 20,000 O.R.

*Army Troops.*—16 Brigades of Heavy Artillery, each of 48 officers, 1,319 O.R.; 8 Squadrons Flying Corps, each of 10 officers, 154 O.R.; 8 Balloon Companies, each of 19 officers, 154 O.R.; 10 Field Hospitals, each of 6 officers, 73 O.R.; 10 Field Ambulances, each of 5 officers, 150 O.R.; 22 Bakery Companies, each of 1 officer, 67 O.R.; 6 Telephone Battalions, each of 10 officers, 215 O.R.; 16 Pack Transport Companies, each of — officers, 14 O.R.; 6 Ammunition Trains, each of 4 officers, 852 O.R.; 6 Supply Columns, each of 2 officers, 426 O.R.

The establishments of above formations, etc., total 18,538 officers and 528,659 men.

The officers for the above formations are to be drawn from the Regular Army, the National Guard and the Reserve of Officers; a certain number of men from selected professions are also to be appointed to commissions. The higher commanders, one Major per regiment and the regimental staff must all be drawn from the Regulars.

At the time that the original notes were written some 40,000 applicants for Commissions in the Reserve of Officers were in training in 16

camp formed for the purpose. The incapables had been got rid of, and the remainder were (from the 15th June last) to be appointed to the various arms in order to undergo special training for a couple of months; finally, after taking part in a week's manoeuvres, those qualified were to be commissioned, in order to proceed at once with the training of the Conscripts. All necessary arrangements had been made for the embodiment and training of the first levy of half a million men. The information given above is contained in a communication issued to the American Press by the United States War Minister.

#### INFORMATION.

##### *Switzerland.*

*The Hoffmann-Grimm Affair.*—It is said that the Swiss have not come out of the Hoffmann-Grimm affair quite so badly as was at first expected would be the case. It is felt that the causes which were responsible for this affair still exist and that Switzerland is not yet at the end of her adventures. Regret is expressed that the oldest of democracies has been the least apt of all nations to understand the true political and social significance of the present War. It is pointed out that the conflict existing in Switzerland between the Civil and Military Powers has given rise, in the Chamber of Deputies, to a desire to revise the two Articles of the Constitution dealing with the functions of the Federal Assembly and those of the Supreme Command of the Army. The text of these articles is given; they are drawn up in wide terms. It is now proposed to define more precisely the respective limits of authority of the Civil Power and the Military Power. The writer of the *Revue* article is of opinion that nothing is to be gained by detailed definitions. He rightly considers that the application of the provision of a Statute is a matter controlled by the personality of those administering the law and not by the terminology of the Statute. It is suggested that had there been fewer politicians and a larger number of statesmen in the Federal Council possibly the Staff of the Swiss Army would have been selected on principles different to those actually adopted. Whether the Federal Council has been acting under Hoffmann's inspiration or under a common inspiration, the fact remains that matters have drifted into an extremely unsatisfactory condition. The relations between the military department and the Higher Command of the Swiss Army are not, it is suggested, what they should be; for three years past a régime has existed in which compromises between ill-chosen officials, who have been at times even antagonistic to one another, have been the order of the day. It is pointed out that what is wanted is the adoption of measures which will place the pilotage of the bark of State in competent hands. Were this to be done the law would then be found to work perfectly.

The situation discussed is one which has been causing an immense amount of irritation in Switzerland.

*The Military Press.*—The announcement is made that Colonel Feldmann recently succeeded Colonel Hungerbühler as Editor of the *Monatschrift für Offiziere Aller Waffen*; and further that on General Wille's invitation Colonel Wildbolz has taken over the Editorship of the *Allgemeine Schweizerische Militärzeitung*.

*France.*

*Field Warfare.*—A French officer writing under the date 15th March, 1917, says that with the return of Spring the question was in every one's mouth: "Shall we see the *guerre de mouvement* once more?" He replies that three conditions are necessary for this to be possible:—(1) A breach must be made in the enemy's defensive system to its full depth; (2) the various sections of the enemy's fortifications must be completely disintegrated; and (3) the enemy troops detailed for the defence of positions must also be completely broken.

It is considered that, with the enormous expenditure of ammunition now taking place, the enemy's fortifications must eventually be disintegrated. However, it is doubtful whether the troops holding positions can ever be sufficiently broken to make warfare in the open to be again possible. Broussiloff in 1916, broke the German front in two places and penetrated far into the enemy's positions, but the German soldiers, in spite of the heavy casualties suffered, sealed the breaches and reformed their line. It has been argued that a break down in ammunition supply and the bad conditions of the roads were responsible for the failure on the part of the Russians to complete their success. It is evident that the writer of the *Revue* article does not consider the prospects of an early return to open warfare on the French front very bright.

This number of the *Revue* concludes with Notices relating to works of military interest published recently.

W. A. J. O'MEARA.

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RIVISTA DI ARTIGLIERIA E GENIO.

June, 1917.

RESUMPTION OF ITALIAN MILITARY OPERATIONS (*continued*).

*The Austrian Counter-Offensive.*

There is no doubt that the enemy foreseeing the Italian offensive and with the intention of attempting one himself, had taken advantage of the situation created on the Russian front, and had ordered a concentration of troops behind his own lines and east of the Isonzo. From the presence of new artillery the Italians had tangible proof of this during their offensive. Owing to delay and the limited number of reinforcements the enemy's advance was assisted while he thought, by counter-attacks and by his knowledge of the ground and the certainty that the Italian defences had not been able to gain the necessary efficiency, to deprive them for the second time of the advantages that they had secured.

The heavy attempts that the enemy intended to make on the Carso were preceded by demonstrative actions conducted with great intensity; such as that of the 1st June, while a violent destructive fire was delivered on Fauti, and infantry attacks on the Quota 174 of Tivoli, 126 of Grasnigo and 652 of Vodice. On the 2nd the bombardment of Fauti increased in violence, and on the 3rd extended along the whole front from Monte San Marco to Flondar. The Italian artillery replied with success to the

enemy's fire and arrested the advance of the infantry. On the 4th the action was further developed from San Marco to the sea and continued uninterruptedly for three days. Three days of intense action were sustained by the Italian troops under difficult conditions on positions recently captured, and not sufficiently organized for defence. The enemy's attack at first had some temporary results on the left of the Italians; it was violently repulsed in the centre and was slowly arrested on the right.

On the night of the 4th there were violent attacks on the Italian positions on the northern slopes of M. San Marco on which the enemy succeeded in placing foot. A strong counter-attack at once dislodged him. The positions between Versic and Jamiano bear witness to an epic strife without precedent, and to bravery worthy of great praise. The troops of the 61st Division, the magnificent Brigade of the Granatieri di Sardinia (Sardinian Grenadiers), 1st and 2nd Regiments Siena (3 1st and 32nd Regiments), and Bari (139th and 140th Regiments) with frequent hand-to-hand combats, and with obstinate defence succeeded in overwhelming the enemy who decimated was compelled to desist from the attack.

On the right, and to the south of Jamiano the Italian position was not advantageous, and the short time that elapsed between their offensive and the enemy's action had not been sufficient to modify the conditions to their advantage. It then became necessary to retire somewhat further to avoid the destructive effects of the enemy's artillery. A further batch of 585 prisoners including 30 officers remained in the hands of the Italians during the course of these defensive combats.

#### *Co-operation of the Various Arms.*

The positive results of this offensive in the spring was, as has been said, very important owing to the tactical objectives gained, not less than for the losses inflicted on the enemy. In addition to 24,000 prisoners, including 634 officers, it is calculated that about 100,000 men were put out of action. The fraternal co-operation of the artillery, siege, field, and mountain, was most efficacious. Ten batteries of English artillery of medium calibre, and coast batteries which were also employed were most valuable.

The bombarding batteries, and the mitrailleuse companies distinguished themselves both by the valour of the men, and by the accuracy of their fire, destroying the enemy's wire defences and trenches, the second accompanying the rifles in the assault, and strongly defending the assailed position. Although it was not possible to use the cavalry in its own tactical manner, the officers and men of this arm rendered valuable service with the batteries, and mitrailleuses, and their losses were considerable. The aviators performed many acts of valour both in reconnoitring and in the offensive. All the different branches of the engineers distinguished themselves, renewing both old and new records, in working with cool courage under the enemy's fire. Sappers, telegraphists, pontooneers, miners, railway-men, air-men, telephonists rivalled one another in bravery. All the auxiliary services, sanitary, Red Cross, S.O.M. of Malta, commissariat, automobilists, worked in an excellent manner.



*On the Asiago Heights. - Minor Operations.*

The enemy had no time to recover from the formidable shock which he had undergone on the Isonzo, before the energies of the Italians compelled him to hasten to the defences on the heights of Asiago. Intense bombardments and arduous infantry attacks pursued him there, compelling him, notwithstanding the advantages of a defensive position which everywhere dominated that of the Italians, to re-arrange his troops continually on the various threatened points, and inflicting on the whole front a series of blows which according to trustworthy information had wasted his forces and his capacity for resistance. A great mine was exploded by the enemy on the night of the 28th May on the Piccolo Lagazuoi (Rio Castrana) which caused an enormous crater, but this did not affect the resistance of the Italians and the losses to their defences were at once repaired. - On the 28th June the Italians exploded a powerful mine near the enemy's positions on Peak 2668 on the southern margin of Piccolo Lagazuoi, entirely destroying the guard, and succeeded in occupying and holding the peak. During the second half of May, and in the beginning of June detachments of Alpine troops, by arduous scaling, succeeded in occupying several dominating points at the head of the Zebra valley and on the 15th June with the aid of the skien stormed the Corno di Caven to the chief of the Austrian defences on the valley of Fano.

*Aerial Actions.*

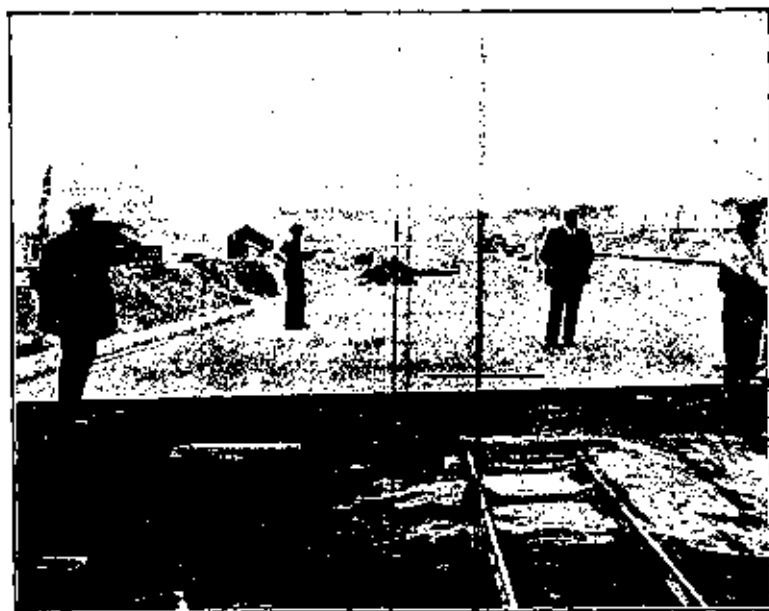
Several brilliant air combats were conducted by the brave Italian air-men during this period of the offensive operations. Thirty-five enemy aeroplanes were brought down in aerial duels or beaten down by fire from anti-aircraft batteries and large quantities of high explosives were dropped on the enemy's railway lines. In the valley Tivacco dense masses of the enemy's troops and convoys of artillery were bombarded by Italian airships with effective results.

On the 23rd May on the enemy's heights of Medezzar and Flondar, and on the 19th, during the action on the zone of Monte Ortigara, several aerial battles took place, quantities of explosives being dropped on the enemy's troops.

*In Albania and Macedonia.*

In Albania on the southern front there were no military events of importance except some encounters between the Italian-Albanese bands and the Austrian soldiers in the region of Alto Osum. During the first 15 days of June, in order to succour the misery of the population of Ciamurià, and the regions of Zagori and Pindo who were suffering from the vigours of the blockade, and to put an end to the brigandage which was a threat to them, the Italians extended their occupation of the localities of Murco, Parga, Margariti, Janina, Zagori, and Pindo. At the same time some very important civil work was undertaken on the road Santi Quaranta-Florina which was most useful for military purposes. On the Macedonian front, in the month of May the Italian troops co-operated successfully in the general offensive of the armies of the Allies. So, at the commencement of the third year of War, the Italian Army, fighting and conquering always gave signs of increasing power, and continual perfection of organization, corresponding with incessant renovation of all the physical and moral energy of a Nation in arms.

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