

PARIS
OR
THE FUTURE OF WAR

TO-DAY AND TO-MORROW

*A List of the Contents of
this Series will be found
at the End of this Volume.*

PARIS
OR
THE FUTURE OF WAR

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PARIS

OR

THE FUTURE OF WAR

It is no purpose of this little book to discuss whether a repetition of war is likely or unlikely, or to speculate on the dawn of universal peace. The writer prefers to take his stand on universal experience, as contained in history, observing that the path of history is strewn with idealistic tombstones—the Holy Alliance, the mid-Victorian Manchester School, the Hague Conventions. The Great Exhibition of 1851 was to inaugurate a Golden Age, to be the concrete symbol of the millennium, yet within a decade the four chief Powers in Europe had reconverted their ploughshares into swords, and the North

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American continent was torn by a fratricidal conflict. To abolish war we must remove its cause, which lies in the imperfection of human nature. The way to "peace on earth" is by the progressive and general growth of "good-will towards men," by a transformation of the spirit of man instead of a futile attempt to bind his fists—cords from which he can easily break free, if so disposed. This changed spirit must be world-wide, for peace-loving nations, especially if prosperous and possessed of rich territory, who abandon their defences, invite and indeed provoke aggression as much as a flock of well-nourished sheep with a lean and hungry wolf in the fold. In the seventeenth century the Protestant states of North Germany, complaining that the expense of maintaining armed forces exceeded the possible benefit of their protection, prayed thus—"let us behave with justice to all men, and all men will behave with justice towards us." They speedily found the fallacy of this faith in an imperfect world, their protests of neutrality an inadequate shield against the rapacity of their neighbours.

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In the years immediately following the Great War, idealists thought to cure the ills of the body politic, as well as human, by a monotonous repetition of the jingle, "Day by day, and in every way, we are getting better and better," but disillusionment came, and the peoples of the world are realizing that international Couéism is as futile to cure real disease as its pseudo-medical counterpart.

Regarding war as a hard fact, as a doctor called in to a sick patient views disease, our concern here is simply with the course of the malady, our object being to gauge its future tendencies, in order, if possible, to limit its ravages and by scientific treatment ensure the speedy and complete recovery of the patient. As diagnosis comes before treatment, the first step is to examine the patient, estimate the gravity of his condition, and discover the seat of the trouble.

The Great War caused the direct sacrifice of eight million lives, to which the British Isles alone contributed three-quarters of a million. So ineffectual was the treatment prescribed by the military

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practitioners who were called in that the illness took over four years to run its course, during which the financial temperature mounted daily, until for this country alone it reached a cost of £8,000,000 a day. Our total war expenditure was nearly ten thousand million pounds; our National Debt has been increased tenfold. Moreover, these long years of strain and want so impaired the physical health of the peoples that they fell an easy prey to epidemic diseases, and the influenza scourge of 1918 and 1919 cost, among the civilian population of the world, more than twice as many lives as were lost in battle.

It is surely clear that any further wars conducted on similar methods must mean the breakdown of Western civilization. Is there an alternative? To answer this question the obvious course is to ascertain what were the foundations on which the military leaders of the Great War built their doctrine of war, and then to examine these in the light of reason and experience—as embodied in history. The traditional military mind

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is notoriously sensitive to any breath of criticism, and any attempt to tear aside the veil of its *mystery* is apt to be greeted by the cry of "sacrilege." Occasionally some daring soldier has done so—and has paid the penalty for exposing to lay eyes the emptiness of the shrine. Thus Marshal Saxe in his eighteenth-century *Reveries* on the art of war, declared that "custom and prejudice confirmed by ignorance are its sole foundation and support," for which temerity Carlyle, the disciple and mouthpiece of the Frederician dogmas, poured scorn on his book as "a strange military farrago, dictated, as I should think, under opium."

Similarly, a generation before the Great War, Monsieur Bloch, the civilian banker of Warsaw, forecast its nature with extraordinary prescience, only to be ridiculed by the General Staffs of Europe. Yet the stalemate that he predicted would arise from the clash of "nations in arms" came true—with the sole difference that he underestimated the blind obstinacy of the leaders and the passivity of the led in continuing for four more years to run their heads against a brick wall.

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Now, however, in these post-war years of disillusionment, is the time to take stock of the exorbitant cost of the war in lives and money, of the moral and economic exhaustion that is its fruit. Though professional experience in any department of life is the way to executive skill, concentration on technical problems has a notorious tendency to narrow the vision. Hence, while paying tribute to the professional ability shown in the later phases of the 1918 campaign, we are justified, standing amid the *débris*, in questioning the strategic aim and direction of the war.

What was the objective of the Allies' strategy? The memoirs and despatches of the responsible military leaders reveal that it was the destruction of the enemy's armed forces in the main theatre of war.

As the proverb tells us, it is no use crying over spilt milk, nor even over spilt blood and money—the price for this empty triumph has been paid by the ordinary citizens of the nations, yoked like “dumb, driven oxen” to the chariot of Mars.

What we are concerned with is the

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future, and it is the worst of omens that the orthodox military school, still generally in power as the advisers of governments, cling obstinately to this dogma, blind apparently to the futility of the Great War, both in its strategy and its fruits. Of these military Bourbons, restored to the seats of authority in most capitals, the saying may be echoed: "They have learnt nothing and forgotten nothing"—if one may judge by the post-war manuals of the various countries, and the utterances of generals and admirals.

New weapons would seem to be regarded merely as an additional tap through which the bath of blood can be filled all the sooner. Not long ago, in *The Times*, a distinguished admiral argued that as "the first and greatest principle of war" was the destruction of the armed forces of the enemy, the only correct objective for aircraft in war must be the enemy air-force.

Thus in this new element, the air, is to be reincarnated the Napoleonic theory—for the doctrine on which the last war was fought, and the next one will be if

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wisdom does not prevail, is the disastrous legacy of the Corsican vampire, who drained the blood of Europe a century back.

From 1870 to 1918 the General Staffs of the Powers were obsessed with the Napoleonic legend; instead of reconnoitring the future in the light of universal history they were purely looking backward on a military Sodom and Gomorrah, until, like Lot's wife, they and their doctrines became petrified.

What is the tenor of this doctrine? First, that there is only one true objective in war—"the *destruction* of the enemy's main forces on the battlefield." Even the most hair-splitting partisan of the orthodox school cannot dispute this statement without throwing overboard all the textbooks and regulations produced by the General Staffs of Europe and America for generations past. Second, that the means of gaining this objective is to pile up greater numbers than the enemy. Obviously the surest way to achieve this is to call up and put into the field the whole manhood of a nation, and so has grown up as a complement to the

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Napoleonic theory of the "objective" another equally short-sighted dogma—that of the "nation in arms," with its blind worship of quantity rather than quality.

Pacifists are fond of talking about the "armaments race." A curious sort of race—for which ponderous cart-horses are bred instead of steeple-chasers, and where the trainers clap "mass objective" blinkers on the horses' heads, while the jockeys ride looking back over their shoulders. Then they wonder why instead of taking their fences freely the poor horses fall at the first open ditch, and cannot be got out under four years?

There would seem to be a slight hitch somewhere in this Napoleonic doctrine.

THE ORIGINS OF THE FALSE OBJECTIVE

How arose this "blinkered" conception that the national goal in war could be attained only by mass destruction, and how did it gain so firm a hold on military thought? The decisive influence was exerted not by Napoleon himself, though his practical example of the beneficent results of "absolute war" was its inspiration, but by his great German expositor, Carl von Clausewitz. He it was who, in the years succeeding Waterloo, analysed, codified, and deified the Napoleonic method.

Clausewitz has been the master at whose feet have sat for a century the military students of Europe. From him, the German Army in particular drew the inspiration by which they evolved their stupendous, if fundamentally unsound, structure of "the nation in arms." It achieved its triumph in 1870 and, as a

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result, all the Powers hurried to imitate the model, and to revive with ever greater intensity the Napoleonic tradition, until finally the gigantic edifice was put to an extended test in the years 1914-1918—with the result that in its fall it has brought low not only Germany, but, with it, the rest of Europe.

Thus, because of the unsoundness of their foundations, Clausewitz's theories have ended by bringing his Fatherland into a more impotent and impoverished state even than when it was under the iron heel of Napoleon. Clausewitz's was truly "a house built on sand."

Yet, despite his main miscalculations, he had a wider understanding of the objects of war than most of his disciples. Clausewitz did at least recognize the existence of other objectives besides the armed forces. He enumerated three general objects—the military power, the country, and the will of the enemy. But his vital mistake was to place "the will" last in his list, instead of first and embracing all the others, and to maintain that the destruction of the enemy's main armies was the best way to ensure the

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remaining objects. Similarly, the other most famous military teacher of the century before the Great War, Marshal Foch, admitted the existence and wisdom, under certain conditions, of other means, but, as with Clausewitz, the reservations were forgotten, and his disciples remembered only his assertion that "the true theory" of war was "that of the absolute war which Napoleon had taught Europe."

This was but human nature, for the followers of any great teacher demand a single watchword, however narrow. The idea of preserving a broad and balanced point of view is anathema to the mass, who crave for a slogan and detest the complexities of independent thought. It is not surprising that military thought in recent generations, in its blind worship of the idol of "absolute war," has poured scorn on the objectives of Napoleon's predecessors—curiously forgetting that they at least gained the purpose of their policy, whereas his ended in ruin. One and all spoke and wrote with contempt of these eighteenth-century strategists, though they included such men as Marshal

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Saxe, whose writings bear the impress of a mind perhaps more original and unbiased by traditional prejudices than any in military history.

Here is how Foch, in his *Principes de Guerre*, contrasts the exponents of the rival theories: " Marshal de Saxe, albeit a man of undeniable ability, said: ' I am not in favour of giving battle . . . I am even convinced that a clever general can wage war his *whole life* without being compelled to do so.' Entering Saxony in 1806, Napoleon writes to Marshal Soult: ' There is nothing I desire so much as a great battle.' The one wants to avoid battle his whole life; the other demands it at the first opportunity."

So that even a man of the intellectual calibre of Marshal Foch thinks solely of the tangible proofs of military victory, with never a reflection as to which of these two men best fulfilled ultimately the national objective of an honourable, secure, and prosperous future.

We see him greeting with approval the dictum of Clausewitz: " Blood is the price of victory. You must either resort to it or give up waging war. All reasons

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of humanity which you might advance will only expose you to being beaten by a less sentimental adversary.”

In the latter sentence we see the recurring delusion of the traditional military mind that the opposition to the Napoleonic theory must necessarily be dictated by mere sentimentalism. It disregards the possibility that it may be due to a far-sighted political economy, which does not lose sight of the post-war years. A prosperous and secure peace is a better monument of victory than a pyramid of skulls.

There are signs, however, that Marshal Foch, in contrast to his intellectual compeers, has gained from recent experience a wider conception of the aims of war and the true objective of military policy. In a statement since the War on the subject of air-power, he gave the weighty and illuminating judgment that “The potentialities of aircraft attack on a large scale are almost incalculable, but it is clear that such attack, owing to its crushing *moral effect on a nation, may impress public opinion to the point of disarming the Government and thus become*

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decisive." Here is a dramatic and far-reaching break with the "armed forces" objective. Perhaps also his connection with the Ruhr policy is evidence of a grasp of the possibilities not only of war without bloodshed, but war without hostilities—the objective, more effective than the enemy's military power, being control of the rival's industrial resources.

"Saul is numbered with the prophets!" The champion and embodiment of the Napoleonic doctrine appears to have cast it overboard. We see an indisputable recognition that two other objectives exist—one moral, the other economic.

If the conversion comes a little late, when we are enjoying the happy and prosperous peace procured for us by the method of "absolute war" so eloquently preached in pre-war years by this august teacher, it may at least acquit us of *lèse-majesté* in suggesting, that by their blind worship of the Napoleonic idol, our recent military guides not only narrowed and distorted their whole conception of war, but led us into the morass—financial, commercial, and moral—wherein the nations of Europe in greater or less degree

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are now engulfed—as was France after Napoleon.

When the high priest of the orthodox faith begins to have doubts, the moment is ripe for those who do not hold that the advent of Napoleon was the Year One of military history, who are disciples of earlier Great Captains, to endeavour, in all humility, to propound a wider and more scientific conception of war and its true objective.

Thus, should the millennium of Universal Peace fail to arrive, and nations still continue to settle by an appeal to force questions which vitally affect their policy, it may be that they will learn to wage war in a manner less injurious to the interwoven fabric of modern civilization, and incidentally to their own prosperity and ultimate security, than proved the case in the Great War of 1914–1918. Security—yes, because the greater the injury inflicted, the deeper are the sores of the body politic, and in these the toxins of revenge fester.

But to achieve this more scientific and economic military policy it is necessary that public opinion should be awakened

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not only to the results but also to the false foundations of the present theory of war.

The saying that "the onlooker sees most of the game" is as true of the broader aspects of war as of anything else, and in the unfettered common sense of the intelligent citizen, and its reaction on those entrusted with the military weapons, lies the quickest chance of deliverance from this dogma—for military authority holds with Bishop Warburton that "orthodoxy is my doxy—heterodoxy is another man's doxy."

Soldiers who refuse to bow in adoration of Napoleon and Clausewitz, his prophet, are condemned as heretics, and the repression of the "Protestants" has been made possible by the apathy of the public towards military questions. Men of the Anglo-Saxon race are not willing to hand over their religious or political conscience into the keeping of "authority," yet by their lack of interest in military questions they do in fact relinquish any check on a policy which affects the security of their lives and livelihoods to an even greater extent.

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For, when war bursts upon the nation, it is the ordinary citizens who pay the toll either with their lives or from their pockets. Only by taking an active interest in the broad aspects of national defence, and so regaining control of their military conscience, can they avoid being driven like sheep to the shearer and slaughterhouse, as in the last war.

PERMANENT NATIONAL OBJECTS

If the citizens of a nation were asked what should be the general aim of the national policy, they would reply, in tenor if not in exact words, that it should be such as to guarantee them "an honourable, prosperous, and secure existence."

No normal citizen of a democracy would willingly imperil this by a resort to war. Only when he considers, or it is suggested to him convincingly, that his honour, prosperity, or security are endangered by the policy of another nation, will he consent to the grave step of making war.

THE NATIONAL OBJECTIVE

THE NATIONAL OBJECTIVE IN WAR

When, however, the fateful decision for war has been taken, what does common sense tell us should be the national objective? To ensure a resumption and progressive continuance of what may be termed the peace-time policy, with the shortest and least costly interruption of the normal life of the country.

What stands in the way of this? The determination of the hostile nation to enforce its contrary policy in defiance of our own aims and desires. To gain our aim or objective we have to change this adverse will into a compliance with our own policy, and the sooner and more cheaply in lives and money we can do this, the better chance is there of a continuance of national prosperity in the widest sense.

The aim of a nation in war is, therefore, to subdue the enemy's will to resist, with the least possible human and economic loss to itself.

If we realize that this is the true objective, we shall appreciate the fact

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that the *destruction* of the enemy's armed forces is but a means—and not necessarily an inevitable or infallible one—to the attainment of our goal. It is clearly not, despite the assertion of military pundits, the sole true objective in war. Clear the air of the fog of catchwords which surrounds the conduct of war, grasp that in the human will lies the source and mainspring of all conflict, as of all other activities of man's life, and it becomes transparently clear that our goal in war can only be attained by the subjugation of the opposing will. All *acts*, such as defeat in the field, propaganda, blockade, diplomacy, or attack on the centres of government and population, are seen to be but means to that end; and, instead of being tied to one fixed means, we are free to weigh the respective merits of each. To choose whichever are most suitable, most rapid, and most economic, *i.e.*, which will gain the goal with the minimum disruption of our national life during and *after* the war. Of what use is decisive victory in battle if we bleed to death as a result of it?

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A single man can be beaten by the simple process of killing him. Not so a nation—for total extermination, even if it were possible, would recoil on the heads of the victors in the close-knit organization of the world's society, and would involve their own ethical and commercial ruin—as we have had a foretaste from the attrition policy of the Great War. But besides being mutually deadly it is unnecessary, for a highly organized state is only as strong as its weakest link. In a great war the whole nation is involved, though not necessarily, or wisely, under arms. The fists and the sinews of war are mutually dependent, and, if we can demoralize one section of the nation, the collapse of its will to resist compels the surrender of the whole—as the last months of 1918 demonstrated.

It is the function of grand strategy to discover and exploit the Achilles' heel of the enemy nation; to strike not against its strongest bulwark but against its most vulnerable spot. In the earliest recorded war, Paris, son of Priam, King of Troy, thus slew the foremost champion of the Greeks. As the Greek legend runs,

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Achilles, when a child, having been dipped by his mother, Thetis, in the waters of the Styx, his whole body became invulnerable save only the heel by which she held him. In the Trojan war, after Achilles had slain Hector in direct combat, Paris brought stratagem to bear, and his arrow, guided by Apollo, struck Achilles in his vulnerable heel. It is significant that Apollo, among his numerous attributes, was held to be the sun god, and the god of prophecy, for here surely he forecast the future of war, and shed light on the true objective—a ray of truth too dazzling for the vision of all but a few soldiers.

After dashing out the lives of millions in vain assault against the enemy's strength, it might not be amiss now to take a lesson from the objective aimed at by Paris three thousand years ago.

Turning from myth to history, it may be useful to glance at two authentic examples of the use of the moral objective—which in each case changed the course of the world's history.

HISTORICAL EXAMPLES

HISTORICAL EXAMPLES OF THE MORAL OBJECTIVE

First, from the Punic Wars. In the struggle between Rome and Carthage for the domination of the ancient world, the two mother cities with their government and population form the vital points—the moral objective. Hannibal, the Carthaginian leader, lives in history as, with Napoleon, the supreme military executant of all time. Yet similarly he appears to lack the gift of “grand strategical” vision. His objective is the armed forces of the enemy, but even the annihilating victory of Cannæ does not bring him to his goal, because Rome itself stands unmastered. The apologists for Hannibal are legion, but they cannot obscure the truth that by his failure to gain Rome he ultimately lost Carthage. Scipio Africanus, his ultimate conqueror at Zama, suffers from the misfortune that his own claims to fame are overshadowed by his adversary’s dramatic victories and heroic stand in Italy for so many years, which appeal to the sentimental

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imagination. But Scipio's appreciation of the principle of the objective is surely more profound. Instead of seeking a decision in Italy, where his troops would suffer under the moral influence of Hannibal's repeated victories in that theatre, Scipio, in face of the most weighty protests, embarks for Carthage. His immediate objective is to free Italy, and he realizes that a threat to Carthage will so act upon the moral of the citizens that they will recall Hannibal. The result proves the soundness of his judgment. Then, by striking at the resources of Carthage in Northern Africa he accomplishes the next step towards the subjugation of the Carthaginian will, and so to Zama, the flight of Hannibal himself to the East, and the capitulation of Carthage. Scipio's moral objective triumphs over the "armed forces" theory of Hannibal.

Turning to the history of the modern world, we have the example of the campaign of 1814, which ended in Napoleon's abdication and relegation to the Isle of Elba. Never perhaps in his whole career does Napoleon's genius shine

HISTORICAL EXAMPLES

so brightly as in that series of dramatic victories in February and March, 1814, by which he staggers the Allies, until, in pursuit of the delusive military objective, he over-reaches himself. He moves east to fall upon Schwarzenberg's rear, drawn on by the theory of destroying the main mass of the enemy's forces. By this move he uncovers Paris—and the Allies march straight forward to gain the true objective—the nerve centre of the French will to resist. Paris is the prey of war alarms and fatigue, in the very condition for a moral detonator to wreck Napoleon's hold. The Royalist, de Vitrolles, tells the Czar Alexander that " People are tired of the war and of Napoleon. Consider politics rather than strategy, and march straight on Paris, where the true opinion of the people will be shown the moment the Allies appear." Captured despatches also bear witness to the underlying discontent of the Capital. The Czar summons a council of war. Barclay de Tolly, the senior, urges that the forces should be concentrated, to follow and attack Napoleon. General Toll affirms that there is only one true course, to " advance

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on Paris by forced marches with the whole of our army, detaching only 10,000 cavalry to mask our movement."

Barclay de Tolly disagrees and argues the example—so hackneyed in later years—of the occupation of Moscow. Toll points out that the effect of the seizure of Paris will be decisive economically and morally, and that there is no true parallel between the cases of Moscow and *Paris*—the nodal point of France.

The Czar decides for Toll's plans, the army sweeps on Paris and enters in triumph after but the slightest resistance, while Napoleon is winning delusive successes in Lorraine. When the news from Paris reaches him, he thinks frantically of a counter-march, but the moral germ disseminated by the occupation of Paris spreads even among his generals and troops. Too late! So great are the moral repercussions of the act, that in a brief space Napoleon, with the people and his satellites turned against him, is forced to an unconditional abdication.

Some might suggest that the German failure to achieve victory in 1914 is a still more recent example of the truth

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that the moral objective is the real one. History may well decide that had the German Higher Command been less obsessed with the dream of a Cannæ manœuvre, and struck at Paris first instead of attempting to surround the French armies, "Deutschland über alles" might now be an accomplished fact.

On the island of Corfu is a giant statue of Achilles, with his heel transfixed by the arrow. Countless hours the ex-Kaiser spent gazing at this statue, yet its message apparently made no impression. "Whom the gods wish to destroy they first make . . ."—blind.

THE MEANS TO THE MORAL OBJECTIVE

After this brief historical survey, let us turn to consider the means by which the moral objective, of subduing the enemy's will to resist, can be attained. These means can be exercised in the military, the economic, the political, or the social spheres. Further, the weapons by which they are executed may be military,

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economic, or diplomatic—with which is included propaganda.

As war is our subject, the diplomatic and economic weapons, except in a military guise, are outside our purview. There appears little doubt, however, that the economic weapon in the struggle between rival national policies during so-called peace has possibilities still scarcely explored or understood. Again, the military weapon can be wielded in the economic sphere without any open state of war existing. In the Ruhr we saw the French aiming, by a military control of Germany's industrial resources, to subdue the latter's will to resist French policy, and with the further motive of a moral disruption between the German states.

What, however, are the ways in which the military weapon can be employed to subdue the enemy's will to resist *in war*?

The question demands that we first examine how the moral attack takes effect, and how the will of an enemy people is reduced to such a degree that they will sue for peace rather than face a continuation of the struggle. Put in a nutshell,

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the result is obtained by dislocating their normal life to such a degree that they will prefer the lesser evil of surrendering their policy, and by convincing them that any return to "normalcy"—to use President Harding's term—is hopeless unless they do so surrender. It is an old proverb that "So long as there is life, there is hope," and this Ciceronian saw may be adduced to support the argument that in the case of people who fight best "with their backs to the wall" only death will end their resistance. This may be true of individuals, or even of considerable bodies of men; the annals of the Anglo-Saxon race afford examples—though such cases have almost always occurred when surrender was as fatal as continued resistance. As soldiers know well, time throws an heroic glamour over events of the past, and national pride leads to pardonable exaggeration of great deeds. Such *résistance à mort* is probably as rare as that mythical bayonet charge and hand-to-hand clash with cold steel so beloved of tradition and the painter of battle scenes. The latter myth was exposed by the long-dead Ardant du

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Picq, that French soldier-realist who refused to bow before the altar of the martial tradition. And the Great War finally dissipated it. Imaginative soldiers, especially those in the supply services, might write letters home describing such close quarter fights, war-correspondents safely behind the lines might retail such martial exploits for the benefit of a sensation-loving public, but the real fighting soldier soon found that two sides did not cross bayonets in mortal conflict. The weaker broke and fled, or else threw up their hands as token of surrender the moment they realized the actual shock could no longer be warded off.

The normal man, immediately he recognizes a stronger, directly he realizes the hopelessness of overcoming his enemy, always yields. Nor is man unique in this respect, as any study of animal life will confirm.

Armies and nations are mainly composed of normal men, not of abnormal heroes, and once these realize the *permanent* superiority of the enemy they will surrender to *force majeure*.

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History, even Anglo-Saxon history, shows that nations bow to the inevitable, and abandon their policy rather than continue a struggle once hope has vanished. No war between civilized people has been carried, nor anywhere near carried, to the point of extermination. The living alone retain the power to admit defeat, and since wars, therefore, are ended by surrender and not by extermination, it becomes apparent that defeat is the result not of loss of life, save, at the most, indirectly and partially, but by loss of moral.

The enemy nation's will to resist is subdued by the fact *or threat* of making life so unpleasant and difficult for the people that they will comply with your terms rather than endure this misery. We use the words "or threat" because sometimes a nation, directly its means of resistance—its forces—were overthrown, has hastened to make peace before its territory was actually invaded. Such timely surrender is merely a recognition of the inevitable consequences.

In what ways is this pressure exerted? Partly through the stomach, partly

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through the pocket, and partly through the spirit. In the "good old days" more forcible physical measures were practised, burning, pillage, and rapine. But in the present age the wholesale and avowed use of such persuasive aids is barred by the ethical code of nations—and press publicity, though, as the last war showed, still indulged in sporadically with or without the specious excuse of "reprisals." But if the international conscience is too tender to permit this direct violence, it swallows its qualms where the people's will to resist is undermined by the indirect method of wholesale starvation. Deprive individuals of food and there is an outcry, cut off the food supply of a nation and the moral sense of the world is undisturbed. Thus the naval weapon is pre-eminently the means of applying "stomach" pressure, because its blockade is indirect instead of direct, general instead of particular. As nothing more surely undermines moral than starvation, a blockade would seem obviously the best means to gain the moral objective were it not for two grave disadvantages. First, it can only be

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successful where the enemy country is not self-supporting, and can be entirely surrounded—or at any rate its supplies from outside effectively intercepted. Second, it is slow to take effect, and so imposes a strain on the resources of the blockading country.

Pressure through “the pocket” can be exerted directly by levies, confiscation, or seizure of customs—which require a military occupation—and indirectly by the general dislocation of business and the stoppage of the enemy’s commerce. Above all, as the military forces of a modern nation are but the wheels of the car of war, dependent for their driving power on the engine—the nation’s industrial resources—it follows that a breakdown in the engine or in the transmission—the means of transport and communication—will inevitably render the military forces immobile and powerless. Just as the engine and transmission of an automobile, because of the intricacy and delicacy of their joints and working parts, are far more susceptible to damage than the road wheels, so in a modern nation at war its industrial resources and

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communications form its Achilles' heel. Mere commonsense should tell us that if possible these are the points at which to strike.

Pressure on "the spirit" is intimately connected with that on "the pocket," a thorough and long-continued interruption of the normal life of a nation is as depressing and demoralizing as the intimidation of the people by methods of terrorism—which, even if temporarily successful, usually react among civilized nations to the detriment of the aggressor by stimulating the will to resist or by so outraging the moral sense of other nations as to pave the way for their intervention.

In the past a military occupation of the hostile country has generally been the ultimate method of bringing to bear this pressure on the spirit, and may still be necessary against semi-civilized peoples spread out in little self-supporting communities, whose material wants are simple, and who offer no highly organized industrial and economic system for attack or control by an enemy.

But though the indignity and restrictions that arise from a military occupa-

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tion are always galling, the conscience of the world forbids, or at least limits, the terrorism of earlier times and so makes the mere presence of an invading army less irksome. Conversely, with the growth of civilization the dislocation or control of an enemy's industrial centres and communications becomes both more effective and more easy as the means by which to subdue his will to resist.

Every modern industrial nation has its vitals; in one case it may be essential mining areas, in another manufacturing districts, a third may be dependent on overseas trade coming into its ports, a fourth so highly centralized that its capital is the real as well as the nominal heart of its life. In most cases there is a blend of these several factors, and in all the regular flow of transport along its arteries is a vital requirement.

As warships are tied to the sea, they cannot penetrate into an enemy country; as, moreover, they are notoriously at a disadvantage against land defences, they cannot even occupy his ports. Hence they are limited to indirect action against the enemy's vitals—either by blockade,

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by enabling troops to be landed, or nowadays by serving as a mobile base for aircraft which can strike at "nerve centres" within some 250 miles of the coast.

Armies have hitherto been the means of "direct action," whether against the resources of the enemy nation, the intimidation of the people, or by the capture or overthrow of individuals who were the mainspring of the opposing policy.

Armies, however, suffer one serious handicap in subduing the hostile will. Being tied to one plane of movement, compelled to move across the land, it has rarely been possible for them to reach the enemy capital or other vital centres without first disposing of the enemy's main army, which forms the shield of the opposing government and nation. It was because of this age-long limitation that the short-sighted, if natural, delusion arose that the armed forces themselves were the real objective.

But the air has introduced a third dimension into warfare, and with the advent of the aeroplane new and boundless possibilities are introduced. Hitherto war has been a gigantic game of draughts.

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Now it becomes a game of halma. Aircraft enables us *to jump over* the army which shields the enemy government, industry, and people, and so *strike direct and immediately at the seat of the opposing will and policy*. A nation's nerve-system, no longer covered by the flesh of its troops, is now laid bare to attack, and, like the human nerves, the progress of civilization has rendered it far more sensitive than in earlier and more primitive times.

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In the Great War aircraft filled but an auxiliary *rôle* to the established arms, and their action against the moral objective was merely sporadic. The blow planned against Berlin, which might have revealed beyond question the decisive influence of the new arm, was still-born because of Germany's haste to conclude an armistice. Those who depreciate the value of the air attack point to the comparatively small damage wrought by any particular

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attack in the Great War, arguing also that the influx of recruits after some of them showed that such "frightfulness" brought its own recoil in a stiffening of the national "upper lip."

The best answer to this short-sighted deduction is to present a few facts. Between the 31st of May, 1915, and the 20th May, 1918, the German air-raids over the London area were carried out with an aggregate force of 13 Zeppelins and 128 aeroplanes, dropping in all less than 300 tons of bombs. The total result was 224 fires, 174 buildings completely destroyed, and 619 seriously damaged, a damage estimated in money at something over £2,000,000. This was achieved for the most part in face of strong air and ground defences, and in a war where the total British air force was never markedly inferior in size to its enemy, indeed generally the reverse.

Let us for a moment take a modern comparison, simply to point the moral. France has 990 aeroplanes in the home country, Great Britain 312—and this is a notable increase on the situation two years ago. Even allowing an ample

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margin of aircraft to hold the British air fleet in check, it would be easily possible for a greater weight of bombs to be dropped on London in one day than in the whole of the Great War, and to repeat the dose at frequent and brief intervals.

A damage spread over three years is a flimsy basis on which to estimate the moral and material results of such a blow concentrated on a single day, delivered with an accuracy and destructive effect unrealizable by the primitive instruments of 1915-1918. Moreover, what is an air fleet of a thousand compared with future possibilities, as civil aviation develops?

Witnesses of the earlier air attacks before our defence was organized, will not be disposed to underestimate the panic and disturbance that would result from a concentrated blow dealt by a superior air fleet. Who that saw it will ever forget the nightly sight of the population of a great industrial and shipping town, such as Hull, streaming out into the fields on the first sound of the alarm signals? Women, children, babies in arms, spending night after night huddled in sodden fields, shivering under a bitter wintry

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sky—the exposure must have caused far more harm than the few bombs dropped from two or three Zeppelins.

Of the crippling effect on industrial output, let facts speak: "In 1916, hostile aircraft *approached* the Cleveland district in thirteen different weeks—which reduced the year's output in that district by 390,000 tons (of pig-iron), or one-sixth of the annual output. In certain armament works it was observed that on the days following raids, skilled men made more mistakes in precision work than usual, the quality of the work done was inferior, while air raids made a constant output impossible."

Those pundits who prate about the "armed forces" objective appear to forget that an army without munitions is a somewhat useless instrument.

Imagine for a moment that, of two centralized industrial nations at war, one possesses a superior air force, the other a superior army. Provided that the blow be sufficiently swift and powerful, there is no reason why within a few hours, or at most days from the commencement of hostilities, the nerve system of the country

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inferior in air power should not be paralysed.

A modern state is such a complex and interdependent fabric that it offers a target highly sensitive to a sudden and overwhelming blow from the air. We all know how great an upset in the daily life of the country is caused at the outset of a railway strike even. Business is disorganized by the delay of the mails and the tardy arrival of the staff, the shops are at a standstill without fresh supplies, the people feel lost without newspapers—rumours multiply, and the signs of panic and demoralization make their appearance. Perhaps an even more striking parallel may be found in the disruption of the whole life of Japan in the recent earthquake. An air attack of the intensity that is now possible would be likely to excel even this stroke in its disorganizing and demoralizing effect. Imagine for a moment London, Manchester, Birmingham, and half a dozen other great centres simultaneously attacked, the business localities and Fleet Street wrecked, Whitehall a heap of ruins, the slum districts maddened into the impulse

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to break loose and maraud, the railways cut, factories destroyed. Would not the general will to resist vanish, and what use would be the still determined fractions of the nation, without organization and central direction ?

Victory in air war will lie with whichever side first gains the moral objective. If one side is so foolish as to waste time—more the supreme factor than ever before—in searching for the armed forces of the enemy, which are mobile and capable of concealment, then clearly the static civil centres of its own land will be paralysed first—and the issue will be decided long before the side which trusted in the “ armed forces ” objective has crossed the enemy’s frontiers.

If, on the other hand, the decisiveness of the moral objective be admitted, is it not the height of absurdity to base the military forces of a nation on infantry, which would—even if unopposed—take weeks to reach Essen or Berlin, for example, when aircraft could reach and destroy both in a matter of hours ?

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To this use of aircraft to gain the moral objective there are, however, two possible objections, one economic, the other ethical. The economic limitation is that by destroying the enemy factories and communications we may so cripple his commerce and industry as seriously to reduce his post-war value as a potential customer. There is a certain weight in this argument, for if one lesson stands out clearly from the last war it is that the commerce and prosperity of civilized nations are so closely interwoven and interdependent that the destruction of the enemy country's economic wealth recoils on the head of the victor. The obvious reply, however, is that even the widespread damage of a decisive air attack would inflict less total damage and constitute less of a drain on the defeated country's recuperative powers than a prolonged war of the existing type.

The ethical objection is based on the seeming brutality of an attack on the civilian population, and the harmful results

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to the aggressor of any outrage of the human feelings of the neutral peoples. The events of the last war have, however, in some measure acclimatized the world to the idea that in a war between nations the damage cannot be restricted merely to the paid gladiators. When, moreover, the truth is realized that a swift and sudden blow of this nature inflicts a total of injury far less than when spread over a number of years, the common sense of mankind will show that the ethical objection to this form of war is at least not greater than to the cannon-fodder wars of the past.

But self-interest as well as humane reasons demand that the warring nations should endeavour to gain their end of the moral subjugation of the enemy with the infliction of the least possible permanent injury to life and industry, for the enemy of to-day is the customer of the morrow, and the ally of the future. To inflict widespread death and destruction is to damage one's own future prosperity, and, by sowing the seeds of revenge, to jeopardize one's future security. Chemical science has provided

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mankind with a weapon which reduces the necessity for killing and achieves decisive effects with far less permanent injury than in the case of explosives. Gas may well prove the salvation of civilization from the otherwise inevitable collapse in case of another world war. Even with the lethal gases of the last war, the use of which was decried as barbarous by conventional sentiment, statistics show that the proportion of deaths to the numbers temporarily incapacitated was far less than with the accepted weapons, such as bullets and shells! Moreover, chemistry affords us non-lethal gases which can overcome the hostile resistance, and spread panic for a period long enough to reap the fruits of victory, but without the lasting evils of mass killing or destruction of property.

Yet we still find that, in defiance of reason and history, the governments are again striving by international legislation to prohibit the use of gas, and to confine the blows of aircraft to the traditional military objectives.

It is a strange reflection on the all-too-

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frequent lack of vision and common sense, that the opposition to the use of gas in war comes from an alliance between those unwonted bedfellows, the traditional militarist and the sentimental pacifist.

The humanization of war rests not in "scraps of paper," which nations will always tear up if they feel that their national life is endangered by them, but in the enlightened realization that the spread of death and destruction endangers the victor's own future prosperity and reputation.

This deeper understanding of war and its goal, and consequently more humane methods, can only come by stripping war of its professional and pacifist catchwords, and grasping that the true national objective in war lies in the after-war. If the civilized world is to be saved from collapse, there is an urgent need to produce true grand strategists to replace the colour-blind exponents of mass destruction, who can only see "red."

No more terrible portent for the future exists than the fact that the militarist nations are awaking to the *destructive* possibilities of the new weapons, while

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the Anglo-Saxon peoples, who are the leaders of *constructive* human progress, and hence might be expected to take longer views, refuse to think or talk about the subject, either from war-weariness or natural antipathy to war. Like the legendary ostrich burying its head in the sand, they seemingly hope to escape the danger by shutting it out of sight.

Absorbed in building the Temple of Peace, they neglect to take into account the stresses and strains the edifice may have to bear—and then, as before in history, are surprised when their plaster and stucco temple collapses under the rude blast of international storms.

Of these two new weapons, air supremacy is possessed by France, chemical resources by Germany. A significant fact is that France lacks the foundations on which to build up a great chemical plant, whereas Germany, in her rapidly developing civil aviation, has a potential instrument whereby to employ her chemical weapons, with relatively slight adaptation. Thus it may not be inapt to quote the views of a high German

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authority, General von Altrock, in the *Militär-Wochenblatt*: "In wars of the future the initial hostile attack will be decided against the great nerve and communication centres of the enemy's territory, against its large cities, factory centres, munition areas, water, gas, and light supplies; in fact, against every life artery of the country. Discharge of poisonous gases will become the rule since great progress has been made in the production of poison gas. Such attacks will be carried to great depths in rear of the actual fighting troops. Entire regions inhabited by peaceful population will be continually threatened with extinction. The war will frequently have the appearance of a destruction *en masse* of the entire civil population rather than a combat of armed men."

The curtain is raised a little more in the new German manual *Der Chemische Krieg*, which was ably summarized recently by the Berlin correspondent of *The Times*. As this manual has a number of quotations from the present writer's views on future warfare, he proposes to repay the compliment by

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quoting certain most significant remarks by the authors of this manual: gas is termed "a vital weapon put into the hands of the nation most highly developed in science and technology," and one which will "confer world importance or even world power, on the nation which shows supreme capacity in the field"—if we did not guess it, a study of Germany's other post-war manuals would leave us in no doubt that the Fatherland is the country cast for this rôle. This conclusion is reinforced by the comments of *The Times* correspondent: "The authors of this handbook declare that since the end of the war no military question has been the field of so much research, and we may conclude that Germany, with her highly-developed chemical industry, has not lagged behind in this respect. 'It is understandable,' they say, 'that a thick veil of secrecy obscures these preparations . . .'"

Of the military advantage of gas, especially for a surprise at the outset of war, there is no question. It is the only weapon which is a commercial product, manufactured from chemicals which are

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an essential requirement of peace time industry. In secrecy of manufacture it is unrivalled, and so can defeat the intelligence service of other powers. All other weapons are, in part at least, destined for a definite military purpose, and therefore their production in quantity cannot be kept a complete secret. In speed of discharge it is necessarily supreme because it is *continuous*, which not even the quickest firing gun can be, and in surprise of discharge also, because it is noiseless and, if used at night or combined with smoke, invisible. Its volume and area of effect is infinitely greater than any projectile—the most rapid-firing-missile-projector, the machine-gun, can only fire 600 bullets a minute, whereas the gas cylinder can discharge millions of invisible bullets or particles in the same time; unlike any projectile it leaves no voids unswept in its beaten zone; it requires no skill in aiming, and is therefore unaffected by the conditions or physical defects of the firer.

Such are the properties of this ideal weapon, which international jurists fondly believe their parchment decrees

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will rule out of future war! However blind to the lessons of history, do they really believe that a nation which plans a military coup, or a "revanche," will discard its strongest trump?

If, then, gas seems destined to replace the bullet and the shell, so equally does the aeroplane appear likely to supersede the gun as the means of projection—and, like gas, aircraft are a weapon not exclusively military, but resting on a civil basis. Their transformation from a civil to a military use is far simpler than with any of the old-established arms. This fact has a vital bearing on the present world situation, for the geographical situation of the continental countries, France and Germany in particular, lends itself to the expansion of air transport far better than that of Great Britain, and thus in any race for air supremacy the former obtain a "flying" start difficult to over-value. In the present stage of aircraft development the central position of these continental countries makes them the natural hub of Europe's air routes. England, in contrast, is thrown back into her mediæval

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position, before the Age of Discovery led to the development of trans-ocean shipping—in semi-isolation on *the edge* of the continental transport system. Though the aerial successors of Columbus have already linked the New and Old Worlds, it must still be some time before trans-ocean flying becomes a normal service. Then, and only then, will the axis of air communications again be shifted to the British Isles, as was that of sea transport by the original discovery of America.

As for the two great Pacific powers, the United States are in an excellent position for the growth of a strong civil aviation, because the vast breadth of North America places a premium on any new and speedier form of transport, whereas Japan suffers, in greater degree, the disadvantages of England's insular and border situation, so that her air development must perforce be an artificial military growth instead of springing naturally from civil "roots."

Moreover, these can only grow firmly and spread in an industrial soil—in the mechanical future of war supremacy will

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go to the nation with the greatest industrial resources.

But Americans would do well to remember that the Japanese military leaders are disciples of Clausewitz, and that one of his axioms reads: "A small state which is involved with a superior power, and foresees that each year its position will become worse," should, if it considers war inevitable, "seize the time when the situation is furthest from the worst," and attack. It was on this principle that Japan declared war on Russia, and *for the United States the next decade is the danger period.*

ARE ARMIES AND NAVIES OBSOLETE?

In view of the transcendent value of aircraft as a means of subduing the enemy will to resist, by striking at the moral objective, the question may well be asked: Is the air the sole medium of future warfare? That this will be the case ultimately we have no doubt, for

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the advantages of a weapon able to move in three dimensions over those tied to one plane of movement are surely obvious to all but the mentally blind. But we are dealing with the immediate future, and an uncertain period may elapse before aircraft can combine with their superior power of movement the radius of action, reliability and hitting power of the other weapons. In pointing out the decisiveness of an air blow at the enemy nation's nerve system, we pre-supposed two conditions; first, a superior air force; second, a centralized objective such as a highly-developed industrial state offers. The European nations and Japan afford such a target to air attack, but not so a country as vast as the United States; until the latter develops into a more closely-knit fabric, and the radius of air action is greatly increased, an air attack against it could hardly be decisive, however locally unpleasant. Washington laid in ruins would merely provide "Main Street" with a fresh supply of small talk; New York paralysed would leave the Middle West unmoved, even the desolation of the Pacific coast would but

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inconvenience the " movie fans " of the nation.

Moreover, though, in Europe, an air blow would be decisive, its achievement would probably depend on one side being superior in the air, either in numbers of aircraft or by the possession of some surprise device. Where air equality existed between the rival nations, and each was as industrially and politically vulnerable, it is possible that either would hesitate to employ the air attack for fear of instant retaliation.

A boxer with a punch in either fist enjoys both a moral and a physical advantage, and the same is true of a nation that, if its initial air blow is frustrated or is lacking in the necessary margin of superiority, can bring another weapon into play.

This truth is but the translation into future grand strategy of the immemorial key to victory used by the Great Captains of War—*striking at the enemy from two directions simultaneously*, so that in trying to parry the one blow he exposes himself to the other.

Nevertheless, the continuance of an

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alternative weapon to the aeroplane does not mean that armies, at least, will survive in their present form. An existing pattern army has as much "punch" as a stuffed bolster—size is no criterion of hitting power.

If, however, the sea and land weapons are likely to continue until the air weapon reaches maturity, a study of the future of war would be incomplete without a discussion of their tendencies and development—and of the ways by which they may help to gain the moral objective.

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A fleet suffers one fundamental limitation on its freedom of action—it is tied to the sea. Hence it cannot strike directly at the hostile nation. Its action is either directed against the enemy's stomach, and through that to his moral, or in conveying and serving as a floating base for troops or aircraft.

As with land warfare, the destruction

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of the enemy's main fleet is often spoken of as the objective, whereas in reality this act is but a means towards it—by the destruction of the enemy's shield the way is opened for a more effective blockade or for the landing of an army. Like land warfare, also, the knowledge that its coasts are thus rendered defenceless, may cause a nation to sue for peace rather than await inevitable starvation or invasion.

But just as the value of armies has been radically affected by the conquest of the air, so has that of surface fleets by the coming of that other new and three-dimensional weapon, the submarine. Instead of hopping over the enemy's shield as does the aeroplane, the submarine dives under it. In the Great War a submarine blockade almost brought the supreme naval power to its knees by starvation—yet Germany never had more than 175 submarines.

The fundamental purpose of a navy is to protect a nation's sea communications and sever those of the enemy, and as, therefore, *blockade* is the main offensive rôle of the naval weapon, it behoves us to

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examine the future of this means to the moral objective.

Since the war controversy has raged round the respective merits of the battleship, submarine, and naval aeroplane, as *destructive weapons*. Into this I have no intention of entering—not only because the problem demands a technical knowledge of sea warfare to which I have no pretensions, but also because the rival arguments, in their absorption with a means, overlook the end. Steering clear of the Sargasso Sea of technical values, let us rather direct our course, by the compass of grand strategy, on the true objective of the naval weapon. Nations cannot afford to stake their existence on a gamble in “futures,” and therefore until a new weapon has attained an all-round superiority to the existing ones, it would be rash to adopt it exclusively. The battleship retains the sovereignty of the *oceans* for some time to come at least, but in the *narrow seas* has yielded pride of place to the submarine—if the lessons of the Great War be assessed. Here is the crux of the matter.

Thus France is wise in concentrating

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mainly on the new weapon, whereas Great Britain and the United States, being concerned equally with ocean communications, cannot yet afford to abandon the surface-going capital ship.

The vital question of the future is how this transfer of power over the narrow seas affects the international situation—particularly that of Great Britain, which is concerned with both spheres of sea-power.

Glance for a moment at a map of Europe—it will be seen that Great Britain lies like a huge breakwater across the sea approaches to Northern Europe, with Ireland as a smaller breakwater across the approaches to Great Britain. We realize that in the Great War, Germany was in the most unfavourable position possible for blockading England's sea communications, her submarines having first to get outside this breakwater through a narrow outlet sown with mines and closely watched, and on completion of this mission make the same hazardous return to their bases. No stronger proof of the potential menace of the submarine in future war can be found

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than that Germany, with so few submarines and despite such an immense handicap, sank 8,500,000 tons of shipping, and all but stopped the beat of Britain's heart.

Contrast with this the geographical position of France, the chief submarine power of the immediate future. Her Atlantic bases lie directly opposite the sea approaches to the British Isles—in an ideal position for submarine action to block the sea arteries on which England's life depends. Of potential significance also is the position of Ireland, an outer breakwater lying across the gateways to Great Britain, for should Ireland ever lend its harbours to an enemy as submarine bases, the odds would be hopeless.

Turn again to the Mediterranean, another long and narrow sea channel through which runs our artery with the East, and where our main naval force is now concentrated. Note that our ships, naval or mercantile, must traverse the *length* of this channel, and worse still, have to filter through a tiny hole at each end—the straits of Gibraltar and the Suez Canal—while midway there is a narrow

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“waist” between Sicily and Tunis, barely ninety miles across.

Then look at the geographical position of Toulon and of the French naval ports on the North African coast, and note how the *radii* of submarine attack intersect the long single line of British sea communication. Is it not obvious that if in a future war any Mediterranean power was numbered among Britain's enemies, her fleet would find it difficult enough to protect itself against submarines, let alone protect merchant convoys and troop transports? When to the proved menace of submarine power is added the potential effect of aircraft attack against shipping in the narrow seas, it is time the British people awoke to the fact that, in case of such a war, the Mediterranean would be impassable, and that this important artery would have to be abandoned. Thus, as a strategical asset, the Suez Canal has lost a large part of its value in face of modern naval and air developments—for in such a war we should be driven to close the Mediterranean route, and divert our imperial communications round the Cape of Good Hope.

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“ War is a trade for the ignorant, a science for men of genius.”

What are the obvious deductions from the three factors we have mentioned ?

The rear communications of existing armies are based on railways, the advanced communications on roads, both of which have proved inadequate to stand even the *internal* strain of modern warfare. In the last war they suffered little *external* interference from enemy aircraft, but in the future this is a certainty. Both these means of communication depend on fixed tracks, which cannot be varied save after a long period of labour and preparation ; since they are shown on the map they are easily located and can be kept under observation from the air. If railways, because of their visibility and limited number of routes, are in themselves the more vulnerable, no more helpless target exists than long columns of slow-moving infantry on the march. A vivid picture of the chaos caused by air attack is to be found in Major-General Gathorne-Hardy's account of the ghastly fate of the Austrian columns and transport after Vittorio Veneto in

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October, 1918. If they are not bombed out of existence, air-attack will at least force them to disperse and take cover so frequently as to slow up their rate of advance to a snail's pace, while days of bombing by hostile aircraft will hardly be a tonic for their moral.

Thus the nation which continues to base its military communications on railways and roads is running for a fall. What is the alternative? The opposite method to tracked movement is trackless—by means of caterpillar track or multi-wheeled vehicles capable of quitting the roads at will on the approach of hostile aircraft, and of advancing on a wide front, instead of through a bottleneck.

If infantry, because of certain limitations on tank-action, may still survive for a time as a battle-instrument, it is the merest common sense that they should be transported to the battlefield, their 3-5 m.p.h. legs replaced by 15-25 m.p.h. mechanical tracks—not only because they may thus be kept fresh for their fighting rôle, but because otherwise they will never reach the battlefield at all.

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The advent of aircraft has had another important consequence. Just as in the wider sphere, their power to hop over a hostile army enables them to strike direct at the political and industrial centres of the nation, so in the zone of the armies has it laid bare the life-line of the hostile army itself—its communications.

The obvious antidote to this new development is to make the communications fluid instead of rigid, and by putting the supply and transport of armies on a trackless basis, we not only revive their "punch" by endowing them with mobility, but extract much of the sting from the military form of the air attack.

Turning to the second factor, that of vulnerability *in battle*, here again a new weapon has revolutionized the methods of warfare by providing soldiers with a machine-made skin to offset the deadliness of modern fire. Not that armour is a new invention, but until the advent of the tank provided him with mechanical legs, man's muscle-power was insufficient to move him when enclosed in an armoured shell. Navies changed long ago

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from muscle-power to machine-power, alike for hitting, protection, and movement. Armies had to lag behind until the invention of the motor because they could not ask the already over-burdened foot-soldier to carry armour—if he had been given it he could not have moved it. Now, however, that a means has been invented, is it not irrational to stand out against the lessons of national progress, to refuse to free the soldier's mind and spirit—his real military assets—from the fetters imposed by his bodily limitations?

Military conservatives are prone to talk of "Men *v.* Machines," as if they were conflicting ideals, whereas in reality neither opposition nor comparison is possible. We should not fall into the absurdity of comparing man with a locomotive or a sculptor with his tools, and mechanical weapons are but the instruments of man's brain and spirit. The reactionary who opposes the inevitable course of evolution forgets that the question of muscle-force *versus* machine-force was settled away back in the Stone Age when the prehistoric fighting man discovered that a flint-axe

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was a more potent weapon than his bare fist. Moral depends ultimately on confidence, and even the finest troops will lose their moral if they are reduced to the *rôle* of mere human stop-butts, powerless to hit back.

The layman is apt to feel mystified by the fog of technical controversy that surrounds the merits of the various arms. To dissipate this by a breeze of common sense, let us put the simple question: How can the old-established arms combat the new—tanks and aircraft?

First, infantry—whose weapons are machine-guns, light automatics and rifles. They cannot attack the tank, because even if they had weapons that could penetrate the tank's armour, the latter's speed would enable it to avoid conflict at will. Similarly, infantry have no power to hit the aeroplanes unless it swoops very low, whereas it can remain at a moderate height and bomb its helpless foes.

For defence against either, infantry are dependent on the help of other arms or on going to earth like rabbits—in which case their offensive value in war is *nil*.

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A business which retained the aged and infirm as the bulk of its employees would soon be bankrupt ; it may find use for a few as caretakers—and that is the only feasible *rôle* for infantry in mobile warfare of the future.

It is needless to consider cavalry, for they suffer all the disabilities, save one, of infantry, and in greater degree because they offer a larger and more vulnerable target. The sole exception is that they can run away faster !

Then, with regard to field artillery—though moderately effective against the sluggish tanks of the Great War, its chances would be infinitely less against a modern tank zigzagging at over 20 m.p.h., and infinitesimal against them if launched in masses. If it cannot hit, it will be hit. In any case, its value depends on the tanks coming to meet it ; its *rôle* thus becomes purely defensive. Only by being fitted in a tank—the obvious solution—can it compel the tank to come to action, and resume its offensive *rôle* in a war of movement.

Though the tank is not yet perfect—it is only as old as the automobile of 1902, or

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the aeroplane of 1910—the fact that it combines in itself the three essential elements of warfare—hitting power, protection, and mobility—makes it clearly superior in normal country to any of the existing arms, which are deficient in one, or all, of these elements. To anyone who has experienced the sense of helplessness caused by the sight of the modern tanks racing towards one at 20 m.p.h., sweeping over banks and nullahs, swinging round with amazing agility in their own length, the question arises: “Can flesh and blood, however heroic, be persuaded to face them?” It is a sight to freeze the blood of a witness with imagination to grasp the demoralizing effect if their guns and machine-guns were actually spitting forth death.

The tank has its limitations ; there are certain types of ground on which it is handicapped—hills, woods, and swamps, and certain defences against which it is helpless. By taking advantage of such partially tank-proof terrain, infantry may survive for a time. But the limitations of the tank are exaggerated by the fact that its tactics have not been thought out and

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adapted to its qualities and limitations. Regarded as a mere prop to an arm—infantry—too helpless to look after itself, it has been frittered away in driblets or under unsuitable conditions—as in the swamps of Passchendaele.

To discover its true use let me suggest an historical parallel :

The military bulwark of the Roman Empire was its legions, for six centuries the “queen of battle,” defying all efforts to oppose them by like means. On the *9th August, 378 A.D.*, on the plains of Adrianople, they met a new challenge—the cavalry of the Goths. “The Goths swept down on the flank of the Roman infantry, so tremendous was the impact that the legions were pushed together in helpless confusion. . . . Into this quivering mass the Goths rode, plying sword and lance against the helpless enemy.” When the sun went down that evening, it set not only on the great Roman Empire, but on the reign of infantry—the instrument and token of Roman world-power. The age of cavalry was ushered in.

Fifteen hundred years later the German

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army was, in turn, the traditional symbol of military power. For four years, her machine-gunners, heirs of the Roman legionaries, defied all the efforts of orthodox tactics to overthrow them.

On the 8th of August, 1918, the German infantry legions were overrun and slaughtered by the onset of the British tanks, almost as helplessly as their fore-runners at Adrianople, exactly fifteen hundred and forty years before. Let the story be epitomized in the words of the enemy, of Ludendorf himself :

" August 8th was the black day of the German army in the history of the war. The divisions in line allowed themselves to be completely overwhelmed. Divisional staffs were surprised in their headquarters by enemy tanks." On the final phase of the war the verdict of Ludendorf was " mass attacks by tanks . . . remained hereafter our most dangerous enemies."

The lesson to be drawn from this historical analogy is that the tank attack is the modern substitute for the cavalry charge, the supreme value of which lay in its speed and impetus of assault, and the

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demoralizing effect of its furious onset. The deadliness of modern fire-weapons brought about the extinction of the cavalry charge, and with its disappearance warfare became lopsided and stagnant. The stalemates of recent campaigns are to be traced to the lack of any means of delivering and exploiting a decisive blow. If, instead of regarding cavalry as men on horseback, soldiers thought of it as *the mobile arm*, the main cause of the interminable siege warfare of the Russo-Japanese and Great Wars would be apparent. The practical view of history lies in projecting the film of the past on the blank screen of the future.

Once appreciate that tanks are not an extra arm or a mere aid to infantry but the modern form of heavy cavalry and their true military use is obvious—to be concentrated and used in as large masses as possible for a decisive blow against the Achilles' heel of the enemy army, the communications and command centres which form its nerve system. Then not only may we see the rescue of mobility from the toils of trench-warfare, but with it the revival of generalship and the art

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of war, in contrast to its mere mechanics. Instead of machines threatening to become the master of men, as they actually did in 1914-18, they will give man back opportunities for the use of his art and brain, and on the battlefields of the future may be expected the triumphs of an Arbela, of quality over quantity. "It is the *Man*, not men, who count in war." The tank assault of to-morrow is but the long-awaited re-birth of the cavalry charge, with the merely material changes that moving fire is added to shock, and that the armoured cavalry-tank replaces the vulnerable cavalry-horse. Thus, to paraphrase, "The cavalry is dead! long live the cavalry!"

The last war was the culmination of brute force; the next will be the vindication of moral force, even in the realm of the armies. From the delusion that the armed forces themselves were the real objective in war, it was the natural sequence of ideas that the combatant troops who composed the armies should be regarded as the object to strike at.

Thus progressive butchery, politely called "attrition," becomes the essence

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of war. To kill, if possible, more of the enemy troops than your own side loses, is the sum total of this military creed, which attained its tragi-comic climax on the Western front in the Great War.

The absurdity and wrong-headedness of this doctrine should surely have been apparent to any mind which attempted to think logically instead of blindly accepting inherited traditions. War is but a duel between two nations instead of two individuals. A moment's unprejudiced reflection on the analogy of a boxing match would be sufficient to reveal the objective dictated by common sense. Only the most stupid boxer would attempt to beat his opponent by battering and bruising the latter's flesh until at last he weakens and yields. Even if this method of attrition finally succeeds, it is probable that the victor himself will be exhausted and injured. The victorious boxer, however, has won his stake, and can afford not to worry over the period of convalescence, whereas the recovery of a nation is a slow and painful process—as the people of these Isles know to their cost.

A boxer who uses his intelligence, how-

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ever, aims to strike a single decisive blow as early as possible against some vital point—the jaw or the solar plexus—which will instantly paralyse his opponent's resistance. Thus he gains his objective without himself suffering seriously. Surely those responsible for the direction of war might be expected to use their intelligence as much as a professional pugilist?

The first gleam of light on the military horizon appeared in the closing stages of the Great War. Recent publications have revealed that in 1918 the Tank Corps General Staff put forward a scheme, originating, it is understood, with its chief, Colonel Fuller, to strike at the nerve centres of the German army instead of at its flesh and blood—the fighting troops. Reflection on the disaster of March, 1918, showed that its extent was due far more to the breakdown of command and staff control than to the collapse of the infantry resistance. A scheme was evolved to launch a fleet of light fast tanks, under cover of a general offensive, which should pass through the German lines, and, neglecting the fighting troops, aim straight

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for the command and communication centres in rear of the front. By the annihilation of these, the disorganization and capitulation of the combatant units was visualized—for without orders, without co-ordination, without supplies, an army is but a panic and famine-stricken mob, incapable of effective action.

This plan, adapted as the basic tactical idea for 1919, had the war lasted, heralds the dawn of scientific military thought in its grasp of the truth that even the military objective is a moral one—the paralysis of the enemy's command and not the bodies of the actual soldiers.

“The wheel has come full circle,” for this blow at the hostile command was the method of Alexander, one of the greatest captains in all history—and who, unlike Napoleon, attained his ultimate political objective in its entirety. It was thus at Arbela that Alexander, with a small but highly trained force, manœuvred to strike through a gap at Darius, and with the flight of its chief the huge Persian army dissolved into a mob, its superior numbers but an encumbrance.

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THE EVOLUTION OF "NEW MODEL" ARMIES.

"Rome was not built in a day"—nor will be the armies of the "new model," though, since the history of the material world is a tale of the replacement of the human muscles by machines, the end is inevitable. Civil developments in mechanical science have repeatedly and continuously influenced and changed the methods of warfare. The longbows of mediæval England had to give way to the musket, the "wooden walls" of Nelson's time yielded to the ironclad, the sailing ship was replaced by the steamship. But natural conservatism and financial stringency make rapid changes in peacetime unlikely.

Thus the first stage will probably be to provide infantry with mechanical legs to carry them to the battlefield, to replace horse-drawn artillery with motor-drawn, or motor-borne guns, and to develop the tank arm to the proportion that its tactical importance as the heir of cavalry demands. With their transport no longer

“ NEW MODEL ” ARMIES

tied to roads and railways, such armies could well make advances of a hundred miles in the day.

A longer period must elapse before tanks swallow the older arms completely, though the absorption of these Jonahs will be hastened if the military leaders of the nations realize that the gas-weapon has come to stay, notwithstanding the paper decrees of Leagues and Conferences.

To realize this we have only to ask the question : How can the respective arms protect themselves against gas ? Aircraft, by rising above it ; tanks, by being air-tight and producing their own oxygen inside ; infantry, cavalry, artillery, by the use of some form of respirator. A respirator is only proof against known kinds of gas ; it cannot be worn for long without incapacitating its wearer from active exertion ; it cannot protect the whole body, unless it be developed into a complete diver's suit, in which movement would be almost impossible. If a man cannot move freely, he cannot fight. If a horse cannot move, what use is his rider ? If the artillery-man cannot serve

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the gun freely and the gun is immovable, field artillery is useless. Therefore, if gas becomes a standard weapon, we are left with the tank and the aeroplane as the sole effective arms for offensive action. Only as the static defenders of the fortified bases—the land-ports—of tanks and aircraft will there be a future for infantry and artillery, the former armed with super-heavy armour-piercing machine-guns, and the latter with anti-tank and anti-aircraft guns.

How long even tanks will persist is a moot point. To hit so small and rapidly moving a target is not easy for the aeroplane, and if it come low, the tank can hit back. In the next lap of the immemorial race between the means of offence and protection, mobility is on the side of the aeroplane, but gravity on that of the tank—in increasing the degree of armour.

Again, though gas is the weapon which will sign the death-warrant of the traditional arms, and by which the new arms will attack the enemy nation, its very triumph will cause one more revolution of the eternal cycle.

“ NEW MODEL ” ARMIES

Since both are gas-proof, the armour-piercing projectile will come back into its own for air and tank battles. Both machines also are self-contained fighting organisms, combining hitting power, mobility and protection. What present type of weapon already possesses this combination? The warship.

Thus the tactics of tank *versus* tank will conform to those of naval war, while overhead Tennyson's "Airy navies grappling in the central blue" find literal and not only figurative fulfilment.

Although overland warfare will ultimately assume a close resemblance to sea fighting, the novelists' dream of land "dreadnoughts" is unlikely of fruition. The obstacles met with on land, the benefit of using an already cleared and graduated path, such as road systems provide through and over these obstacles, the load-capacity and width of bridges, will limit the size of the landships. Even the amphibious tank does not solve the problem of getting out of a river with steep banks.

Thus a concentrated essence of fighting power, rather than bulk, will be the aim

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of the tank-designers of the future, just as the organizers of armies will pin their faith on quality instead of quantity, turning for inspiration to Alexander, Xenophon and Gustavus Adolphus in place of Clausewitz. Not "how large," but "how good" will be the standard of to-morrow.

To sum up our deductions—The land "punch" of the future will be delivered by fleets of tanks, their communications, maintained by cross-country and air vehicles, offering no fixed and vulnerable target for an enemy blow, either on land or from the air. These quick-moving and quick-hitting forces will advance by rapid bounds into the enemy country to strike at its vitals, establishing behind them, as they progress, a chain of fortified bases, garrisoned by heavy artillery and land marines—*late* infantry. A proportion of land marines might also be carried in this tank fleet to be used as "landing parties" to clear fortifications and hill defences under cover of the fire from the tank fleet.

Speed, on land as in the air, will dominate the next war, transforming the

“NEW MODEL” ARMIES

battlefields of the future from squalid trench labyrinths into arenas where surprise and manœuvre will reign again, restored to life and emerging from the mausoleums of mud built by Clausewitz and his successors.

EPILOGUE

THE critic may ask why this survey has been confined to weapons already known, why, in our forecast, we have not endeavoured to imitate the imaginative flights of a Jules Verne or an H. G. Wells in the past? The future may bring to fruition the sensational dreams of the novelist—discovery in bacteriological and electrical science may lead to the wars of the future being waged by means of the germs, or the green, purple, and other “death” rays, lurid in hue and effect, which form the properties of the prophetic novelist. But for a reasoned attempt to forecast the future of war we cannot rely on hypothetical discoveries of a revolutionary nature—which may prove but chimeras in the desert. For our suggestions to have a practical value, they must be based, not on the shifting sands of speculation, but on solid rock—the evolutionary development of weapons and

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powers already available. We appreciate that further scientific discoveries may modify our conclusions as to the means by which the moral objective is gained—but the goal itself will remain true.

It is hoped that the danger and futility of the Napoleonic doctrine of “absolute war,” and of its fungus growth—the “nation in arms,” has been demonstrated so clearly that they may be cast on the ash-heap. Let us never again confound the means with the end. The goal in war is the prosperous continuance of national policy in the years after the war, and the only true objective is the moral one of subduing the enemy’s will to resist with the least possible economic, human, and ethical loss—which implies a far-sighted choice, and blend, of the weapons most suitable for our purpose. A statue of General Sherman in Washington bears this inscription: “The legitimate object of war is a more perfect peace.” The phrase is too narrow, and warring nations reckon little of legitimacy—but common sense, reinforced by bitter experience, should lead the grand strategists of the future to the wider truth that a more

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perfect peace is the only *rational* object of war, and that any military plan or act which infringes this prospect causes a bad debt on the balance-sheet of victory. May the nations and their political and military chiefs remember the words of Solomon : " Where there is no vision, the people perish." Future wars will be waged by weapons that are the product of peace-time industry ; these weapons will be directed against the nerve centres and arteries of civil life, and, if wisdom prevail, the ultimate peace will be the guiding star of the military policy and plans. Weapons, target, and aim will alike be civil. The future of war lies in the future of peace.

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