

THE WORLD IRON AND STEEL SITUATION IN ITS BEARING ON THE FRENCH OCCUPATION OF THE RUHR

By C. K. Leith

NATIONS have quarreled about economic matters from time immemorial, but it is only in comparatively recent years that mineral resources have become an important cause of war. The reason for this is simple. The world is just beginning the intensive use of these resources. The curves of production are steeply rising—so steeply, in fact, as to indicate that a greater volume of mineral resources has been used since 1900 than in all the preceding recorded history of the world. Within this short time the question of the possession of these resources has changed from one of incidental concern to nations to one of vital import to their prosperity and even to their existence; it is becoming clear that the nation without control of certain essential minerals, such as coal, oil, and iron, can look forward to a position of inferiority, both in war and in peace.

Whether it is right or wrong that economic considerations of this kind should play a dominating part in international affairs is another question; their influence is here merely recorded as a fact. Even if in the best thought of the world the resulting industrial development should come to be regarded as wrong from ethical or other standpoints, it seems unlikely that effective means for curbing it can be devised for many decades; in the meantime it may be safely assumed that the international importance of mineral resources will grow rather than dwindle.

The influence of economic factors on international relations is now pretty generally recognized, but the factors are so varied and complicated that this recognition is scarcely more than academic and as yet it does not seem largely to influence public thought. The problem needs simplification, definition, and better perspective. The following sketch attempts to show how a few salient facts relating to one of the great natural resource problems affect international relations.

WORLD DISTRIBUTION OF THE IRON AND STEEL INDUSTRY

Iron ore deposits are known in all continents and in nearly every country; they number thousands. The aggregate reserve

can be figured in units of tens of billions of tons—enough to meet all probable requirements of the world for some hundreds of years.

Only a few of the many deposits have yet been heavily drawn upon, because large production of iron and steel requires many favorable conditions: a huge ore reserve of a suitable grade in a limited area, accessibility to a large coal supply of proper grade for use in smelting, accessibility to population large enough and with sufficient industrial development to furnish demand, and control by people with organizing ability, driving power, technical skill, and capital to convert the ore into form adapted to demand. Once established, the inertia of invested capital helps to maintain production at a few places in spite of potentially favorable conditions in undeveloped regions.

The relative importance of these factors is not the same in all the great centers of production. The tonnage, grade and distribution of the iron ore are fundamental to the iron and steel business, but they are not the only factors establishing its locus, and in some cases they are not the dominant ones. A low-grade ore may overcome handicaps caused by other conditions; or a high-grade ore may be useless because the other requisite conditions are not present. With overwhelming demand and energetic management, the handicap of low grade and distant location of ores from consuming centers may be overcome. It is almost impossible to measure the exact effect of any one of these factors independently of the others. However, the net result of their interaction is measured with some accuracy by production figures over a long period of years. Where production has been large and continuous it may be assumed that the favorable conditions on the whole outweigh the unfavorable ones. The distribution of past production therefore discloses the nodal points or foci of the many contributory influences localizing the industry and affords a standard from which we may view and interpret the changes of the present and future.

With the above considerations in mind we may survey the distribution of the world's iron and steel industry. Stripped of detail and qualification it is as follows:

The Three Main Geographic Units of the Iron and Steel Industry. For convenience and brevity we may use the term "unit" to designate the whole network of iron mines, coal mines, transportation lines (water and rail), blast furnaces, steel plants, finishing plants, and factories using iron and steel products,

which goes to make up each of the principal geographic groups in the iron and steel business.

The iron and steel industry is confined mainly to countries bordering the North Atlantic basin. Of these countries the United States, England, and a third group consisting of Germany, France, Belgium and Luxembourg, are preeminent, together accounting for no less than ninety-three per cent of the post-war steel-producing capacity of the world. Of this the United States produces more than the other two combined, and about half of the total production of the world. In addition, these countries control miscellaneous production in other countries.

The remaining production is scattered through many countries, including Spain, Sweden, Russia, Austria, South Africa, China, India, Australia, Mexico, and the countries of South America. These are small units developed to meet local demands, and they are on the increase both in number and size; but no one of them seems to have all the conditions necessary for the development of a really great industry comparable to the first three units named.

The dominant features of the United States production are the great reserves of high-grade iron ore around Lake Superior, the extensive use of the Great Lakes for cheap transportation of Lake Superior ore to the Lower Lakes, and the smelting of the ores principally in the region contiguous to the Lower Lakes, because of its possession of abundant coking coal and because of its proximity to centers of consuming population. There are other large reserves of iron ore and coal in the United States, such as those around Birmingham, Alabama; but they support only subsidiary units of the iron and steel industry. Iron ores in relatively small quantities are imported from Cuba, Chile, Sweden, and Newfoundland, not because there is insufficient ore available in the United States but because foreign ores are more cheaply available than Lake Superior ores to some of the plants near the seaboard. The United States is largely dependent on imports for the various alloy metals, the "sweeteners" necessary in the making of steel, such as manganese, chromium, tungsten, vanadium, etc. Minerals carrying these elements do not seem to be present in the United States in adequate grade and quantity to meet requirements.

The English iron and steel industry depends mainly on low-grade iron ore from four districts in England, of which the

Cleveland district in northeastern England is the most important, followed by the Lincolnshire, Northamptonshire, and Cumberland-Lancashire districts. These districts have access to large supplies of coking coal and to the ocean. The low grade of the iron ores requires importation of high-grade ores, for mixture, from northern Sweden, northern Spain and to a less extent from North Africa. The ferro-alloy minerals are largely imported, as in the United States.

The great iron-ore supply of Continental Europe is centered in northeastern France, including Lorraine, and overlaps into Luxembourg. The coal beds which furnish the coke for the smelting of this lie mainly in Westphalia (in western Germany), with extensions into Belgium and northern France. The detached Saar basin furnishes an inferior and relatively small supply. The iron and steel industry based on these raw materials is localized principally in the region of the German coal fields, with subordinate centers in Belgium, northern and northeastern France, and in the Saar region. The valleys of the Rhine and its tributaries connect the coal and iron ore fields. The industry is to be regarded as a single great unit, regardless of national boundaries. The low grade of the iron ore favors the use of considerable amounts of higher-grade ores in mixtures, and thus it is that ores are imported from northern Sweden and Spain, together with miscellaneous supplies from other sources. The ferro-alloy minerals are mainly imported.

All three of the great units, in the United States, in England, and in western Europe, are mainly located close to the source of the coking coal and to the consuming population, rather than close to the iron ore deposits. For all three the dominant ore supply is at home, but some ores are imported for considerations of grade and cost. All are reaching farther and farther afield for the proper quantities and grades of iron ore and ferro-alloy ores. Thus it is that there has been considerable activity in the development of the iron ores of northern Africa. The pre-war Agadir incident was related to an attempt of the French and Germans to forestall each other in gaining control of certain Moroccan deposits. Much attention has been given in recent years to the development of great reserves of high-grade ore as far away as Brazil. The distance is upwards of 5,000 miles from any one of the primary units, yet the grade is so high and the quantity so enormous that the time seems to be approaching

when this ore will be drawn upon. The United States has been less active than the others in its attempts to secure subsidiary outside supplies because its need for them has been less urgent; nevertheless it has been active in recent years in Cuba, Chile, Brazil, Central America, and Mexico.

The Probable Continuance and Growth of Power of the Three Principal Units. Minor units of the iron and steel industry are developing to meet local demands in many parts of the world. Presumably this development will continue in the future, more or less concurrently with the growth of the consuming capacity of the population. There are many places where the raw materials can be brought together, but few where there are not some handicaps of grade or quantity, still fewer where adequate supply is combined with large demand, and not one which promises to compare with any of the three existing units. The three major units have continuously become more and more firmly entrenched in world position. This situation is determined by conditions which cannot be essentially changed by human enactment. Nature put the right combination of materials there, and other conditions of environment caused the growth of a population of sufficient size and consuming capacity.

Capital investments have accumulated to towering size in the three primary units, and it is difficult to transfer this capital en masse to other centers. As an argument for the development of a great iron and steel industry in a particular locality it is often said that it possesses both coal and iron ore and a certain demand for iron and steel products. The reason why this argument is often answered in the negative is that the local demand covers the whole range of iron and steel products, and that while in the aggregate it may amount to a considerable tonnage it is not sufficient to take care of the output of each of the many hundred of supplementary manufacturing and finishing plants which are necessary to make the raw material ultimately available to the consumer. For instance, farm machinery may constitute one of the items going to make up the total demand, but the demand for farm machinery may, in itself, be of too small volume to warrant the establishment of all the necessary plants. Even if locally established, the supplementary operations are handicapped by competition with the quantity production of the primary units. The supplementary elements of any one of the primary units are so thoroughly established that, even if the

crude iron and steel were to be produced in some new location, much of it would have to undergo long transportation to plants which put it in the form desired by the consuming public.

Thus it is that the increasing world demand is first met by further development of the great primary units of the iron and steel industry. Instead of moving plants out to meet the demand, the established ones reach out and bring in any additional raw materials that may be required. As transportation improves it is possible to reach further and further afield.

In short, it is probably beyond the power of individuals, of governments, or even of combinations of governments, to cause any essential shift in the great centers of iron and steel production.

It is perhaps not generally understood that the emergence of the iron and steel industry into its present powerful position has been a matter of only a few years. More steel has been produced since 1910 than in all the preceding history of the world. Even the conditions existing the year prior to the war cannot be regarded as adequate precedents to the impending situation. The industry is developing power, if it has not already done so, to shake racial and political traditions and even governments. All of us, individually and collectively, are creating the ever-mounting demand which requires the expansion of the industry, and it would require definite and overwhelming considerations to cause us to forego our individual demands for jackknives, automobiles, steel buildings, railroads, farm machinery, and the thousand other iron and steel products to which we have adapted our conditions of living. If we continue our demands it is questionable whether any political control can prevent their satisfaction, and, in consequence, the continued growth in power of the primary units of production.

The part played by the world's primary iron and steel units in the war offer interesting evidence of their power. Early in the war a well-known American engineer, Mr. James R. Finlay, of New York, predicted Germany's success on the basis of her then complete possession of the Franco-German unit. To illustrate his point he drew a picture of the resources in the Great Lakes area of the United States, which includes the great part of the iron and steel industry, and attempted to show that this region could probably stand off all the rest of the United States in a war. This view was much criticised at the time, but the successive

events of the first three years of the war seemed to bear out its correctness. It was only when the third and largest unit, that of the United States, came into action that the defeat of Germany became certain.

Relations of Governments to the Three Primary Units. The operations of the principal units of the iron and steel industry have become so large and so intimately related to national prosperity that governments are beginning to participate in one way or another in their control. Before the war the German Government took an active part in the organization and direction of the German steel industry, and during the war all governments found it necessary to exercise a considerable degree of supervision. Since the war the European governments, including the English, have retained a large measure of control through embargos, preferential tariffs, bounties and, in certain cases, even direct financial participation. The United States Government alone since the war has left the business exclusively in private hands. And now there is the French occupation of the Ruhr, a situation in which governments are too obviously concerned to require comment. If the industry continues to grow, as seems inevitable, the participation of governments is not likely to be less.

The International Aspects of the Iron and Steel Industry Confined to the Three Primary Units. These are the only units with influences greatly transcending national boundaries, and the major international problems involved are already fairly obvious. These relate to: first, the competition among the primary units both for raw materials and markets; second, the consequent pressure, both economic and political, on the countries having the needed raw materials and markets; third, the struggle for political control of the Franco-German unit.

Difficulties arising from the first and second causes named are not now acute, and they are for the present relegated to the background by the overshadowing portent of the Ruhr. They will be treated briefly with a view to gaining space for the discussion of the Ruhr problem.

Germany's pre-war effort to secure "a place in the sun" was closely connected with the rapid growth of its iron and steel and related industries, especially from 1900 onwards. With the aid of vast merchant-marine extensions, and under the skilful guidance and centralized control of the government, German

steel products were finding their way to all parts of the world. The sharp edge of the wedge of industrial competition with England was steel.

During the war the steel-producing capacity of the world was greatly increased. In the years following the war it was in excess of world requirements, and the competition for markets was keen. The foreign markets gained by the United States during the war were rapidly recovered to a large extent by the Germans and English—aided by depreciated exchange and by the necessity, in the absence of strong markets at home, of securing foreign markets at any cost. The battle is well under way and is probably far from its climax. The struggle is quiet, but in deadly earnest.

All of the principal units in the iron and steel industry are normally well supplied with raw material. Because of this, their present activity in developing additional supplies in foreign countries has not caused international disputes, nor has it required the use of political pressure. If, however, attempts should be made to block this development, it is easy to foresee that political pressure would soon be forthcoming. Whether or not the pressure is justified on general grounds of world welfare, it probably may be taken for granted that it nevertheless will be exerted. The physical necessity of the survival and growth of the giant units of the industry seems likely to come into sharp conflict with the principle of the "self-determination of nations."

THE RUHR SITUATION

Salient features of the Ruhr situation are:

1. The iron and steel industries of the Ruhr form the core of a single economic unit which overlaps into France, Belgium and Luxembourg. The bulk of the pig iron and steel production is in the Ruhr territory, near the coal; the remaining production in Belgium, France and Luxembourg is from subordinate and tributary units. In addition to blast furnaces and steel mills, there are many plants which put the steel and iron into finished and semi-finished forms; these, likewise, are centered in the Ruhr. The result of division of the industry along present national boundaries would leave France nearly all the iron ore, but insufficient coking coal; and Germany would have most of the coking coal and no iron ore. A study of the pre-war movements of raw materials, resulting from adjustments during a long period

of peace, indicates the complexity of the relations between the different parts of this great unit. They are generalized and diagrammatically expressed on the accompanying sketch.

2. The economic influence of the Franco-German coal, iron and steel unit can hardly be over-estimated, for nearly all of the remaining industrial activity of western Europe is dependent upon it in one way or another for its driving power and for its raw, semi-finished, and finished iron and steel products. The remaining steel capacity of Europe is only a third as large and is scattered in many small units. Sweden has immense iron ore reserves but no coal, with the result that its iron and steel industry is small. Spain has large ore reserves and some coal fairly near at hand. During the war there was a great increase in the number of local Spanish smelters. Most of its iron ore production, however, has been exported to England and Germany, and this will doubtless continue to be the main feature of the situation in the future. Austria in its present boundaries has a small amount of iron ore, but lacks sufficient coal of coking grade. Czechoslovakia contains the larger part of the iron ore of old Austria, extensive deposits of good coking coal and modern blast furnaces and steel works, and should be in a strong position in the future; but its ore reserve is only a tenth of that tributary to the Ruhr, and presumably this will never be more than a subordinate European unit. Russia has abundant coal and a fair amount of iron ore. The principal production of iron ore is from the Krivoi Rog basin in southern Russia (now included within the boundaries of the Ukraine Republic), where the reserves, though of good grade, are probably not more than ten per cent of those of northeastern France (including Lorraine). It has also considerable reserves in the Ural Mountains. The steel industry is mainly centered near the coal in southern Russia. Following the revolution this came to an almost complete standstill. If this industry should come under the management of Germans, through some future Russian-German alliance, rapid development may be looked for, but the natural conditions (principally the scattered distribution of the iron ores), will limit this unit to a secondary European position.¹

¹For more detailed information the reader is referred to: "The Iron Ore Resources of Europe," by Max Roessler, Bull. 706, U. S. Geol. Survey, 1921. Imperial Mineral Resources Bureau, "Iron Ore, Part 6," London, 1922. "Raw Materials Problem," by Economic Committee of the League of Nations, Vol. 2, 1921. "The Iron and Associated Industries of Lorraine, the Sarre District, Luxembourg, and Belgium", by Alfred H. Brooks and Morris F. LaCroix, Bull. 703, U. S. Geol. Survey, 1920.

3. The preponderant position of the Franco-German unit is of comparatively recent origin. The real use of the Lorraine-Briey-Luxembourg iron ores began only with the invention of certain metallurgical processes in 1880 and the production has reached large volume only in the last two decades. The agricultural Europe of the past could be geographically divided into many self-sufficient parts. Similarly, in the early periods of small production of iron and steel many scattered small units could supply local needs, but in its new gigantic proportions the sphere of influence of the Franco-German industry cannot be so divided. Future settlements of European boundary questions have this new condition to deal with; there is no precedent.

4. The growth of the European iron and steel industry has been facilitated by the active interest of the German Government, but presumably, also, there would have been rapid growth without this aid. In the main, the industry has not been directed by the same minds directing governments, nor is it likely that the governments will or can in the future materially modify or curb its progress. If today the ruling powers of Europe or of the world were to decide that the growth and influence of the coal and the iron and steel industry had gone far enough, it is highly questionable whether the means of stopping it could be devised, at least for a long while.

5. The political control of this great industrial weapon means political supremacy both in war and peace. The history of the increasingly bitter struggle between France and Germany for control of the industry indicates a growing recognition of this fact. In 1870 the iron and steel industry had not largely developed, but Germany already foresaw a shortage of iron ore and in the peace settlement of 1871 drew a boundary line which included in Germany the outcrop of the iron ore as then known in Lorraine. The dip of the iron-ore beds was westerly into France and it was at that time supposed that the ore down the dip in French territory was worthless. Subsequently France's exploration and development of this deeper bed, under the spur of necessity, showed that the ore was as good as that in Lorraine and in larger quantity, with the result that at the opening of the Great War the French reserve was estimated in round numbers at three billions of tons while Germany had only two billions in Lorraine. Before the Great War German capital had secured control of ten to fifteen per cent of the French field. Almost the

first step of Germany in the Great War was to occupy the French iron ore field and the great extension of the German coal field farther north into Belgium and northern France. The evidence seems to be conclusive that this was not a mere incident of military operations but the result of a long-considered design to secure and consolidate these resources. With the close of the war France recovered all the iron ore fields, including those lost in 1870, and in addition took more or less temporary control of the Saar coal basin. At this stage the great iron and steel unit of western Europe was divided between Germany and France, France holding all the iron ore and part of the coal, Germany holding preponderance in the coal and the steel plants. Neither division could function effectively on a large scale without drawing on the other for materials. Germany's share in the unit was still preponderant, through its possession of the coal, and production in French territory had returned less than half way to normal. Finally has come the French occupation of the Ruhr, giving France political control, for the time being at least, of the entire unit. If this control be made effective—and this is the immediate difficult problem—it means power to levy tribute not only against the remainder of Germany but against all the rest of continental Europe, within the range allowed by the competition of the English and American units. For purposes of the present discussion it is not material what form this control may take—whether financial, or by direct occupation and dispossession, or by the creation of a small buffer state, or by a form of tax or tribute, or by some other device.

The Possibility of a Failure by France to Consolidate Its Position. There are powerful racial, historical, political and psychological factors entering into this problem which it is not in our province to discuss, our purpose being to set forth only the bearing of the iron and steel situation.

The Ruhr is Germany's greatest industrial asset, and its successful occupation by the French is the most obvious means of forcing the payment of reparations. German military resistance from outside the Ruhr is seriously weakened by the loss of an essential agency of war. Passive resistance in the Ruhr itself is a contest of sentiment and stark physical needs. The demand for the products of the Ruhr is insistent from all sources, and the meeting of this demand is the only way for the workers to earn a livelihood and save their families from dire distress.

World opinion may condemn this as economic slavery, but until such opinion can be organized into united effort through the League of Nations or other control it seems unlikely that it will effectively change the course of events in the Ruhr itself.

Such a fundamental readjustment touches other nations at many points and will necessarily entail much economic friction. From the standpoint of the iron and steel industry it seems reasonably clear that England's dominant interest will be to prevent, if possible, this readjustment. England's trade with the continent is becoming rapidly adapted to post-war conditions and the new situation will require sweeping and annoying readjustments. Of vastly greater import, however, is the fact that the unification of the iron and steel industry of western Europe under the control of France will in time create a much more formidable economic competition than could be expected under divided control. France substitutes for Germany in the struggle for "a place in the sun." England has many times faced the spectre of the rapid concentration of power in a single continental nation, and has uniformly resisted such movements. The presence of British troops near the heart of the region is still another complication, with large possibilities of friction.

There is a commonly accepted view that French genius does not lie in the direction of management of great industrial enterprises and that this may prevent success of the French attempt to manage the Ruhr iron and steel industry. The writer shares this view, but with reservation; the reservation arises from the question whether the French qualities of management would appear different if France had possessed the dominant coal supplies from the beginning and had learned gradually, like the Germans, to use them. The French have done pretty well with their own limited supplies, and it remains to be seen how fast they can learn, if at all, to manage industries based on the possession of larger supplies.

The prize is so great and so well understood by French leaders that presumably nothing will be left untried to make the grip secure. Parenthetically it may be noted that Premier Poincaré was formerly general counsel of the Comité des Forges, the French "steel trust," and that French army reports made public during the last few months indicate full comprehension of the economic possibilities. The highest trump card of the European game is now in hand. Will France be likely to give it up because

of the more or less muddled advice of outsiders, who are viewing the situation from traditional, political, historical, or ethical standpoints, without full appreciation of the new "economic imperative" in the situation? Likewise, if Germany weathers the present storm, will it forego all future efforts to supply a basic deficiency by acquirement of the French iron ores? Perhaps neither one of these governments as now constituted will gain control. It may in time lodge in some new state or bloc not yet organized.

These remarks are not meant to imply what the present purpose of France may be—whether the immediate collection of reparations, or permanent control. If we accept the French declaration that the purpose is solely one of reparation, we may also understand that the process at best will be a slow one and that after a long and strenuous effort in getting the machine into action, France may gradually become accustomed to the idea of permanent control without at any time making a conscious decision about it. If by the permanent acquisition of the Ruhr France gains such a prominent position as an analysis of the conditions seems to indicate, it will be driven by force of circumstances to protect this position and, as we know, "protection" or "self-defense" or "security" are highly elastic terms which can cover a great variety of activities.

The failure to collect large sums for reparation in the first few weeks or months—or even years—of occupation may be a relatively small price to pay for the ultimate results, although the immediate cost in money and effort will be a large one. German resistance within the Ruhr itself, or political protest at home, or international complications arising from so mighty a readjustment, may prove to be beyond France's power to master. It is clearly to Germany's interest to develop these difficulties to the utmost. If and when it becomes clear to the German mind that these measures will fail, it seems almost inevitable that an effort will be made to buy off France at any possible cost, through an offer to the European allies. It is also to be surmised that under these circumstances the French Government will attempt to drive a hard bargain, and will relinquish its glittering chance for permanent future superiority only at a high price and under pressure of public opinion at home and abroad.

The Possibility That Germany May Replace the Ruhr Asset by Development of Another. There are hundreds of manufacturing

plants throughout Germany which are dependent on the Ruhr for their pig iron and unfinished or semi-finished steel. This demand can be partly met by developing minor units of iron and steel production elsewhere in Germany and by purchase outside of Germany; but at best this supply is an uncertain one, and it will be many years—if ever—before it can be organized to produce anything like the volume required. The great obstacle in the way of developing another iron and steel industry outside of the Ruhr is the lack of coal and iron ore.

Mighty efforts will be made by Germany to develop its Silesian coal and lignites, but it will take years to make these supplies even approximately adequate, to say nothing of the tremendous readjustment involved. As a result of the partition of Silesia between Poland and Germany proposed by the League of Nations, only twenty-four per cent of the coal production (on the basis of 1913 statistics) remains to Germany. The case would be somewhat analogous if the United States were suddenly to lose the eastern coal field, including Pennsylvania, Ohio, and West Virginia, thereby becoming dependent solely on the coal fields of the mid-west.

Since the war Germany has been active in its attempts to secure outside supplies of ore from Sweden, Spain and elsewhere, as a means of lessening its dependence on the French ores, but the aggregate supplies available from such sources are strictly limited. They must be divided with England and their transportation adds a heavy burden of cost. It is sometimes argued that with aggressive and skilful management almost any readjustment can be made in the assembling of raw materials, and in support of this argument many specific cases may be cited. England, for instance, has been able to draw in raw materials from all parts of the earth. This argument fails to take into account the enormous volume of coal and iron ore needed for the iron and steel industry in its present expanding form; it constitutes a mighty stream, requiring an adequate source and necessitating transportation facilities of almost unbelievable magnitude and effectiveness.

The Possibility of Reverting to Dual Control of the Franco-German Iron and Steel Industry. The question naturally arises whether it would not be possible to go back to a partnership control of the Franco-German iron and steel unit. The reasonably good results from this kind of control up to the Great War

- naturally afford a standard to which the public mind reverts. Such a solution would accord with the traditional manner of handling such disputes. The failure of the present French effort would almost certainly be followed by at least a temporary working arrangement along partnership lines. There are several features in the situation, however, which raise serious question whether such a reversion to the pre-war status will be permanently realized, and which seem to indicate that the struggle may continue until one nation or the other is in control of the entire industry. The first is the temporary difficulty of curbing passions inflamed by the war. The second is the recent great expansion of the actual physical power and influence of this economic unit, and as a corollary the increasing desirability of controlling it in the interest of future national power. This is now recognized by the parties involved as never before. The third is the fact that unified control means greater efficiency of operation than divided control by partners hating each other. It is necessary for the future welfare of Europe that this unit be skilfully operated in order that Europe may hold its own in competition with the other two great centers—England and the United States. This necessity is likely to prove to be a powerful influence toward unification of control. A fourth is the fact that the growth of the business naturally puts a premium on firm control of raw materials, for a long future, as a matter of insurance. As long as one available source of essential supply is in control of a potential enemy, the industry is in unstable equilibrium. Before the war the Ruhr industry had made some progress in acquiring control of French iron mines. This tendency to safeguard the future by extending control to raw materials has been concurrent with increasing concentration of industry the world over.

It is quite possible that the struggle will be a long and intermittent one and that some patched-up partnership may be arranged in the near future which will hold until the machine again breaks down. But its ultimate renewal seems inevitable.

SUMMARY AND CONCLUSION

Out of the unprecedented growth of an industry based on natural resources comes the present situation in the Ruhr. It may be viewed in the light of the following considerations:

- (1) The iron and steel industry is the largest single factor in

modern industrial development. (2) Nature has decreed concentration of this industry in three geographic units—the United States, England, and Franco-Germany, which are the only ones with influence largely transcending national boundaries. (3) There are no others which promise to rival them for a considerable time to come. (4) The growth of these units of power has been more or less independent of politics, and probably in the future they will not be materially curbed by political considerations. (5) They will carry into political supremacy the nations possessing them. (6) Because of the competition of these three units for markets and raw materials international difficulties have arisen, and will continue to arise in the future. (7) Further international difficulties will be brought about by political pressure of other countries which may refuse readily to meet these demands.

Among the several contributory factors to the present Ruhr situation one begins to appear as the probably dominant factor of the future—the struggle for the control of the iron and steel industry of western Europe. The recent growth of this industry has created an industrial problem for which there is no historical precedent. The industry cannot be divided geographically into self-sustaining and effective units; its physical unity favors unit political control. Partnership control, under the circumstances, has become difficult, if not impossible; it would be a condition of highly unstable equilibrium. Unit political control confers supremacy in Europe both in war and peace, suggesting that the fight for such control will ultimately be one to a finish, even though it may be temporarily suspended. The failure of France to secure immediate reparation is a small matter compared with the ultimate issues at stake.

There are many qualifications which might be added to the above general statement, and the problem involves other economic and political factors which may control for a time. No attempt is made to predict when or how unification may be accomplished, or by what nation or group. The purpose of this discussion is simply to set forth the logical effects of the development of natural resources upon international affairs, on the assumption that such development is an element in an uncontrollable environmental change to which political conditions will ultimately tend to conform.

BRITISH WAR POLICY AND THE WESTERN FRONT

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IT IS inevitable that the subject of Allied war policy should continue to be discussed from a more or less controversial standpoint. The matter itself was a controversy in its very nature: a resultant of conflicting forces, of opposing or divergent ideas, purposes and interests. By its nature, too, the subject overlaps the ragged boundary line between politics and strategy. Perhaps the latter may fairly be considered a matter of history, but the political factor is in no sense retrospective. It involves forces still at play, makes the question of credit or blame a matter of very practical importance, and introduces an element which by no means makes for an attitude of historical detachment. It is only natural, therefore, that side by side with matter-of-fact, non-controversial works such as General Edmond's first volume of the "British Official History" and General Montgomery's "Story of the Fourth Army" (books which mark the beginning of thorough and authentic history of military operations on the Allied side), the past year has added fresh fuel to the controversial and partisan discussion of general war policy. The same contrast seems to hold true in Germany.

Mr. Dewar and Colonel Amery, General Bliss and General Maurice all contribute new facts of decided importance; but at the same time each restates familiar matter from the perspective of a particular standpoint. Each of these standpoints represents, no doubt, one facet of the truth; but taken together they are irreconcilable.