

THE STRATEGY OF RAW MATERIALS

*A Study of America in Peace
and War*

BY

BROOKS EMENY

*With the Statistical Assistance of
J. Edward Ely*

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B. E.

Washington, D. C.
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PREFACE

THIS volume by Dr. Brooks Emeny is published by the Bureau of International Research of Harvard University and Radcliffe College as a study of one of the most important problems that shape American policy. It serves also as an important unit in a series of studies which the Bureau has undertaken. The series has as a general focus the question of national and international types of control over basic industries and commodities. In particular it may well be considered as a companion volume to the forthcoming work on *International Control in the Non-Ferrous Metals*, since these metals constitute so important a part of the present study from the point of view of the defense policy of the United States.

There is legitimate ground for argument, perhaps, about some of Dr. Emeny's conclusions; and certainly there is a possibility of other interpretations for some of his data, but no student who is interested in an accurate presentation of the complex facts upon which any procurement policy for national defense must rest can disregard this competent study. The charts in themselves are a monument to a patient and admirable labor of interpretation in the best tradition of scholarship.

The Bureau, of course, assumes no responsibility for the views or the facts presented in any of the studies which it helps to bring into print, but speaking as an individual member of the Bureau, I may be permitted to express my own satisfaction at the character of Dr. Emeny's work. Its importance at this time, when the United States is confronted by the need of reorganizing its whole commercial foreign policy, will be evident at a glance. Its bearing on our internal industrial development is also clear.

PREFACE

I know of no study which can contribute more to a proper understanding of some of the permanent factors in American foreign policy than this little volume.

W. Y. ELLIOTT

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INTRODUCTION

THE important bearing, economic, political, and strategic, which the disparity of foodstuffs and essential industrial raw materials¹ among nations has upon their peace and war relations, is becoming universally recognized. The experience of the Great War¹ and the unstable conditions which have characterized international politics since its close have served to draw more strongly the lines of distinction, not only between the inheritors of the world's natural wealth and the disinherited, but between the inheritors themselves. For the size and effectiveness of national power is no longer determined alone by the extent of a nation's territory and population, or by the wealth of its treasuries, or the strength of its armies and of its equipment in munitions, but *rather by its capacity for industrialization*. And since large scale industrialization presupposes the possession or ready availability of vast quantities of the basic industrial raw materials, nature, through her unequal distribution of these, has rigidly set a limit to the number of states capable of achieving the status of Great Powers.

¹ Among the more important books dealing with different aspects of the problems which arose during the World War, in the matter of the procurement and distribution of the essential foodstuffs and raw materials, the following may be cited: Clarkson, G., *Industrial America in the World War*, Houghton, Mifflin and Company, N. Y., 1923; Smith, G. O., *The Strategy of Minerals*, Appleton and Company, N. Y., 1919; *Mobilizing America's Resources for War*, American Academy of Political and Social Science, Philadelphia, July 1918; Salter, Sir Arthur, *Allied Shipping Control*, Oxford Press, N. Y., 1921; Eckel, E. C., *Coal, Iron and War*, Henry Holt and Company, N. Y., 1930; Requin, Edouard J., *America's Race to Victory*, Stokes, N. Y., 1919; Baker, C. W., *Government Control and Operation of Industry in Great Britain and the United States during the World War*, Carnegie Endowment, Oxford, 1921; Beveridge, Sir William H., *British Food Control*, Yale University Press, 1928; Bruneau, Pierre, *Le Rôle du Haut Commandement au Point de Vue Economique de 1914 à 1921*, Berger-Levrault, Paris, 1924; Delbrück, Clemens von, *Die Wirtschaftliche Mobilmachung in Deutschland*, Verlag für Kultur politik, Munich, 1924; Surface, Frank M., *The Grain Trade during the World War*, N. Y., Macmillan, 1928; Wrisberg, Ernst von, F. H. et al, *Die Organisationen der Kriegführung*, Finking, Leipzig, 1927, 3 vols.; Goebel, Otto, *Deutsche Rohstoffwirtschaft im Weltkrieg*, Yale University Press, New Haven, 1930.

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The significance of this fact to the problems of international politics in general and of disarmament and security in particular, is definitely implied in Article VIII, Paragraph 2, of the Covenant of the League of Nations.² And on no occasion have the questions involved been more clearly defined, more extensively discussed, and at the same time more assiduously avoided, so far as a meeting of the issue is concerned, than in the disarmament conferences which have followed in unending succession since the war.

As early as September of 1922, there appeared a series of statements drawn up by a majority of the League members,³ at the request of the Council, giving "the requirements of their national security, geographical situation, international obligations, and *special circumstances*,"⁴ so far as these determined their armaments needs. And in its official report, issued shortly thereafter, the Third Committee of the Third Assembly took note of the above memoranda as follows:⁵

"As may be clearly seen from the statements received from the different countries, the national security of each depends very largely on the full military strength of the other countries. The subject of the statistical enquiry should therefore be this full military strength. It consists of two factors:—

"1. The actual military strength, which is expressed in the peacetime armament and the expenditure on national defense:

"2. *The potential military strength, in which the important element is the industrial and economic power of each state, the military importance of which was proved in the last war.*"⁶

The problem thus raised concerning the inequality of nations as to "potential military strength," particularly in its implied relation to the essential industrial raw materials, became the subject of a lengthy report submitted by Sub-Committee A of the Preparatory Commission on Disarmament in

² "The Council, taking account of the geographical situation and circumstances of each State, shall formulate plans for such reduction (of armaments) for the consideration and action of the several governments."

³ League of Nations, *Report of the Temporary Mixed Commission on Armaments*, September 7, 1922 (Armaments A. 31. 1922), (C. 631. 1922. IX), (C.T.A. 173), *passim*.

⁴ League of Nations, *Report of the Temporary Mixed Commission on Armaments* (A. 81. 1921) 1921, p. 8. (Italics mine.)

⁵ League of Nations (A. 124. 1922 IX). (A. III/17. 1922), pp. 4-5.

⁶ Italics mine.

1926. In its reply to Question I (a) of the Preparatory Commission, requesting a "Definition of the various factors—military, economic, geographical, etc.—upon which the power of a country in time of war depends," the Report commences with the statement that: "The power of a country in wartime depends on those factors which constitute its power in peacetime and on the conditions of time and preparedness under which all its available resources may be employed in wartime. War brings into operation all the armaments and national resources either as combatant forces, which are liable to rapid exhaustion, or for the maintenance and supply of these forces."⁷

This striking recognition of the significance of the "nation in arms" is more thoroughly elucidated in the following paragraphs, taken from Chapter III, Part II, of the Report, which deserve repetition in extenso.⁸

"A complete list of the factors which come into operation in modern war would have to include *all the factors of the national life in time of peace.*

"It is, however, necessary to determine the *factors which are of main importance in war and on which consequently the strength of a country in wartime essentially depends.*

"These fundamental factors are as follows in the case of any country at war:

(1) The quantity, quality and the degree of preparation for war of the land, sea, and air forces in existence at the opening of the war or formed in the course of the war; also the armament, equipment and upkeep of those forces;

(2) The number, composition and distribution of its inhabitants, taking into account the resources in men that might be obtained from overseas territories, and also the resources in men that would, on the contrary, have to be kept in these territories;

(3) *The extent to which it is self-supporting (for instance, as regards fuel, foodstuffs, raw material and manufactured goods), and the extent to which, as a result of its means of transport and the freedom of its communications, especially its communications by sea, and of its financial strength, it can obtain the commodities of every kind in which it is deficient from abroad;*

⁷ League of Nations (C. 739. M. 278. 1926. IX). (C.P.D. 28) (Ser. L.o.N.P. 1926. IX. 16), p. 12.

⁸ *Ibid.*

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(4) The geographical situation, the configuration of its territory and the development of its system of means of communication of every kind, which may enable or prevent it from rapidly moving and supplying its forces;

(5) Fixed defensive systems of the mother-country and colonies (fortifications, naval and air bases, naval stations, etc.);

(6) The time which is at its disposal to prepare and bring its forces into operation or to allow of outside help reaching the country without danger of invasion, due to: either the natural protection afforded it by the sea or strong frontiers; or its peacetime armaments; or *the measures which it has been able to adopt in order to expedite the mobilization of at least a part of its resources*;

(7) *The capacity of the country to produce or import war materials in wartime (ships, aircraft, war material of every kind)*;

(8) The internal and external political situation."⁹

It is thus apparent that the interrelationship of the basic factors of national power (military, human, material, geographic, financial and political), has at least on one occasion been clearly defined in an official international conference, and that the primary importance of the factor of raw materials has been duly appreciated. The fact, therefore, that statesmen have been unable to solve the international problems of security and disarmament arising therefrom, does not lie in ignorance of the questions involved, but rather in the incongruities of the prevailing world system.

But the problems inherent in the unequal distribution among nations of resources in foodstuffs and the essential industrial raw materials have not been alone the subject of interest of official international conferences. A number of Institutes and research centers have also devoted considerable thought to the matter, particularly since the war.

One of the pioneer conferences dealing with the question, for instance, was held during the Institute of Politics at Williamstown in 1923, the subject being: "Raw Materials and Foodstuffs in the Commercial Policies of Nations."¹⁰ Likewise the proceedings of the Institute of Pacific Relations, the

⁹ Italics mine.

¹⁰ Culbertson, William S., "Raw Materials and Foodstuffs in the Commercial Policies of Nations," *The Annals*, Vol. CXII, March 1924, American Academy of Political and Social Science, Philadelphia.

American Society of International Law, and the Royal Institute of International Affairs, to mention but a few, are filled with references to the problem from one angle or another.

In March 1933, a group of distinguished specialists, known as the Mineral Inquiry, held a conference in New York on the subject of "Minerals in their Political and International Relations."¹¹ This meeting was, in fact, the culmination of nearly ten years of coöperative research on the part of its participants.¹² Considerable literature has also been released upon various phases of the subject by the World Peace Foundation,¹³ the Carnegie Endowment for International Peace,¹⁴ the Council on Foreign Relations,¹⁵ and the Foreign Policy Association.¹⁶

One of the most notable books to date, the product of "An Inquiry" organized by the Inter-Parliamentary Union, entitled, *What Would Be the Character of a New War?* appeared

¹¹ See *Elements of a National Mineral Policy*, The Mineral Inquiry, New York, 1933.

¹² Among the important books and pamphlets which have been published under the authorship of members of the Mineral Inquiry, having a direct bearing on the subject at hand, the following are most notable: Bowman, Isaiah, *The New World*, N. Y. World Book Company, 1928; Bain, H. Foster, *Ores and Industry in the Far East*, Council on Foreign Relations, Inc., 1933; Voskuil, Walter H., *Minerals in Modern Industry*, John Wiley and Sons, Inc., New York, 1930; Leith, C. K., *World Minerals and World Politics*, Whittlesey House, McGraw-Hill Book Company, New York, 1931; Furness, J. W. and Jones, L. M., *Mineral Raw Materials*, Trade Promotion Series, No. 76, Bureau of Foreign and Domestic Commerce, U. S. Dept. of Commerce, 1929; *International Control of Minerals*, Mining and Metallurgical Society of America and the American Institute of Mining and Metallurgical Engineers, N. Y., 1925; Spurr, J. E., editor, *Political and Commercial Geology and the World's Mineral Resources*, McGraw-Hill Book Company, N. Y., 1930; Rawles, William P., *The Nationality of Commercial Control of World Minerals*, American Institute of Mining and Metallurgical Engineers, N. Y., 1933; Weld, Minot C., *Manganese for National Defense*, A.I.M.E., New York, 1933.

¹³ Young, A. A. and Fay, H. Van V., *The International Economic Conference*, Vol. X, No. 4, 1927; Jessup, Philip C., *American Neutrality and International Police*, Vol. XI, No. 3, 1928; Myers, Denys P., *World Disarmament, Its Problems and Prospects*, 1932.

¹⁴ "Armament Trade and Manufacture," *Inter. Conciliation No. 295*, December 1933; "Minerals and International Relations" by Holland, Sir Thomas H., *Inter. Concil. No. 266*, January 1931; "Raw Materials and their Effect upon International Relations," articles by Smith, George Otis *et al*, *Inter. Concil. No. 226*, January 1927; Fradkin, E. K., "Chemical Warfare—Its Possibilities and Probabilities," *Inter. Concil. No. 248*, March 1929.

¹⁵ For the complete list of publications bearing on the subject, see *Foreign Affairs Index*, Vol. I-X. Council on Foreign Relations, N. Y., 1934, p. 135.

¹⁶ "Production and Raw Materials," February 1931, Vol. VI, No. 24; "The National Defense Policy of the United States," August 1932, Vol. VIII, No. 13.

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in 1932.¹⁷ Also from the Brookings Institution in Washington there have been released two notable publications, the first consisting of a collection of lectures entitled *Mineral Economics* (McGraw-Hill, 1932), and another book by Wallace, B. B. and Edminster, L. R., *International Control of Minerals* (Washington, 1930). Still another work, edited by Evans Clark, appeared in 1932 under the auspices of the Twentieth Century Fund, entitled *Boycotts and Peace*, in which the fact of the dependence of nations upon different raw materials was critically examined as a lever for the imposition of sanctions.¹⁸

But whereas it is apparent that the literature on the subject is quite extensive, it is notable that the books thus far written have been concerned, for the most part, with the broader aspects of the problem. In no case has the actual war situation of any nation as to foodstuffs and essential industrial raw materials been thoroughly examined in its economic and strategic aspects. Yet this factor is in reality basic to any consideration of the "war potential" of nations; for inasmuch as the degree of national self-sufficiency is closely related to the degree and effectiveness of national power, an examination of the situation of individual states in this regard should logically precede the more general speculations upon the international aspects of the problem.

The contents of this book, therefore, will be primarily concerned with a consideration of the raw material situation of one country, the United States. Briefly stated, our purpose is to present the factual material necessary for the clarification of the three following questions:

1. Granted an extreme war emergency, to what extent

¹⁷ Published by King, P. S. and Son, Ltd., London, 1931.

¹⁸ In addition to the literature noted above, which treats on different phases of the subject, should be mentioned:—Dietrich, B. and Leiter, H., *Produktion Verkehr und Handel in der Weltwirtschaft*, Seidel und Sohn, Vienna, 1930; Lippincott, I., *Economic Resources and Industries of the World*, Appleton, N. Y., 1929; Cole, Major D. H., *Imperial Military Geography*, Sifton Praed and Company, London, 1933, 7th ed.; Hawtrey, R. G., *Economic Aspects of Sovereignty*, Longmans, Green, N. Y., 1930; Rhode, Major Hans, *Deutsch-französische Machtfaktoren*, Berliner Börsen-Zeitung, Berlin, 1932; Hoffmann, Karl, *Oelpolitik und Angelsächsischer Imperialismus*, Ring, Berlin, 1927; Lawrence, J. C., *The World's Struggle with Rubber, 1905-1931*, Harper, N. Y., 1931.

could the United States, on the basis of its own resources, meet the full demands of self-sufficiency in the essential foodstuffs and industrial raw materials?

2. In the cases of the specific commodities for which we would be entirely or partially dependent upon imports, what sources of supply might be available from foreign countries under various contingencies of war?

3. What specific measures, if any, could be adopted as a means of assuring our self-sufficiency under any war emergency?

Although the above questions reduce to simplest terms the limits of our enquiry, it is evident that the numerous factors involved embrace a considerably wider field than specified. For, whereas it can be factually established that the United States could or could not be self-sufficient in certain commodities, the problem of whether serious strategic difficulties in procurement might be involved in certain cases, would depend largely upon whom we opposed in arms. So far as police operations in the Caribbean or China are concerned, no raw material problem whatever could present itself. If, on the other hand, it became a matter of conflict with one or a group of the Great Powers, the circumstances might prove quite otherwise, particularly if the British Empire were ranged against us.

The important relation of the other Great Powers to our strategic raw material situation has in fact a twofold significance. For not only is their potential strength in war a matter worthy of consideration, but taken collectively they either possess or can control a large part of the remainder of the world's wealth in natural resources, not already under our territorial or regional jurisdiction. This is particularly true in the case of the specific industrial raw materials in which we are not self-sufficient. It is essential, therefore, to know not only the measure of the potential strength of the other Powers, in terms of the degree of their self-sufficiency, but also the specific raw materials whose sources of output they possess or control, and upon which we might be dependent in case of an extreme war emergency.