LEAGUE OF NATIONS

REPORT

OF THE

COMMITTEE FOR THE STUDY

OF THE PROBLEM OF

RAW MATERIALS

Geneva, 1937.

[Communicated to the Assembly, the Council and the Members of the League.]

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INTRODUCTION.

The Committee for the Study of the Problem of Raw Materials was appointed by the Council [1] in the early months of 1937 in pursuance of a resolution passed by the Assembly at its meeting on October 9th, 1936, in the following terms:

" The Assembly,

" Considering that the time has now arrived when discussion of, and enquiry into, the question of equal commercial access for all nations to certain raw materials might usefully be undertaken with the collaboration of the principal States, whether Members or non-members of the League, having a special interest in the matter:

" Decides to request the Council, when it thinks fit, to appoint a Committee composed, in suitable proportions, of members of the Economic and Financial Committees of the League of Nations together with other qualified persons, irrespective of nationality; to undertake the study of this question and report thereupon;

" Recognises that the choice of the raw materials to be considered should be at the discretion of the body thus appointed;

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[1] In accordance with the Assembly resolution, the Council took steps to include in the membership of the Committee experts from countries non-members of the League of Nations. It was successful in securing the collaboration of experts from Brazil, the United States and Japan but was not able to obtain the assistance of a German expert. Moreover, the Committee has not had the benefit of the collaboration of an Italian expert.

The Committee was composed as follows:

M. W. Stucki *(Chairman)*, Ministre plénipotentiaire, Délégué du Conseil fédéral pour le Commerce extérieur, membre du Comité économique;

M. Max-Leo Gerard *(Vice-Chairman)*, ancien Ministre des Finances de Belgique;

Professor J. van Gelderen *(Vice-Chairman)*, Chef de Division du Département des Colonies aux Pays-Bas;

M. D. Antokoletz, Directeur de la Division des Questions économiques du Ministère des Affaires étrangères de la République Argentine;

Lieutenant-Colonel Thomaz Fernandes, Conseiller économique au Ministère des Affaires étrangères du Portugal;

M. Henry F. Grady, Vice-Chairman of the U.S.A. Tariff Commission;

M. Ivar Högbom, Professeur de géographie économique à l'Ecole des Hautes Etudes commerciales de Stockholm;

Sir F. W. Leith-Ross, G.C.M.G., K.C.B., Chief Economic Adviser to H.M. Government in the United Kingdom, Member of the Economic Committee;

M. F. Maurette, Sous-Directeur du Bureau international du Travail (M. F. Maurette est décédé après la deuxième session de la Commission);

Dr. Joao Carlos Muniz, Consul général du Brésil à Genève;

Dr. Vilem Pospisil, Ministre plénipotentiaire de Tchécoslovaquie, membre du Comité financier;

Professor Ch. Rist, Directeur de l'Institut scientifique de Recherches économiques et sociales à Paris;

M. Norman A. Robertson, First Secretary, Department of External Affairs, Ottawa;

M. Gonzalo Robles, Expert en questions économiques au Mexique;

M. Adam Rose, Sous-Secrétaire d'Etat au Ministère de l'Industrie et du Commerce, Président de la Commission interministérielle polonaise des matières premières;

M. Boris Rosenblum, Directeur au Commissariat du Peuple pour les Affaires étrangères, Agrégé de l'Institut d'économie et de politique mondiales, membre du Comité économique;

M. Y. Shudo, Attaché commercial à l'Ambassade du Japon à Berlin, membre du Comité économique;

Sir Henry Strakosch, Union Corporation Ltd., Member of the Financial Committee (Sir H. Strakosch resigned after the first meeting).

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" Believes that the participation in the work of the Committee of nationals of the non-member as well as Member States specially interested would be desirable;

" And instructs the Secretary-General to communicate the present resolution to the Governments of non-member States."

* * *

The Committee has held three meetings, the first from March 8th to 12th, the second from June 16th to 25th and the third from September 1st to 4th, 1937.

For the second meeting, the Committee divided into two Sub-Committees, one to examine complaints and difficulties as to the supply of raw materials, and the other to examine complaints and difficulties as to acquisition and payment. The experts from countries which encounter difficulties in regard to acquisition of and payment for raw materials co-operated in the work of this second Sub-Committee.[1]

In addition, the Committee entrusted to certain experts [2] the study of particular suggestions of a financial and economic character which had been put forward during the second meeting. These experts held a meeting from August 26th to 28th, 1937.

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The text of the Assembly resolution, which lays particular emphasis upon equality of commercial access, limited from the outset the programme of the Committee to the economic aspects of this problem. Consequently, the Committee did not regard it as its function to discuss the distribution of the territories from which raw materials were drawn.

Similarly, it decided that it was not its function to discuss the question of restricting raw-material supplies in order to discourage aggression. The Committee took as its aim the possibility of international co-operation in facilitating commercial access to raw materials for all countries in the world engaged in peaceful trade.

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It is obvious that there would be no " raw-material problem " in the form in which it has presented itself to the Committee if the distribution of raw materials was not uneven.

For countries poor in raw materials, the difficulties experienced as regards access to such materials vary according to the general economic conditions of each country. No doubt, in principle, all of them are in the same situation *vis-à-vis* countries which produce raw materials if the latter hinder the development and export of any one of these materials. To ascertain whether, and to what extent, such obstacles exist was

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[1] M. N. V. Badulesco, Professeur adjoint à la faculté de droit de Bucarest, Sous-Secrétaire d'Etat au Ministère des Affaires étrangères, membre du Comité économique;
M. Nicolas Momtchiloff, Ministre de Bulgarie, Délégué permanent de la Bulgarie près la Société des Nations;
M. E. de Winchkler, ancien Ministre de Hongrie;
M. Bramsnaes, Directeur de la Banque nationale du Danemark, ancien Ministre des Finances.

[2] M. V. Pospisil, Président;
M. J. Laurent, Directeur de la Banque d'Indochine;
Professor F. Mlynarski, Président de l'Institut polonais de Compensation;
M. Momtchiloff;
M. G. A. Royot, de la Banque des Règlements internationaux, Bâle;
Mr. S. D. Waley, C.B., of the British Treasury.

precisely one of the questions which it was the Committee's object to examine and with which it has dealt in its report.

The degree of difficulty experienced by countries lacking raw materials varies according to their needs for these materials and according to their means of acquiring them. For a country lacking raw materials but not possessing any industries or not obliged, for demographic reasons, to develop them, no problem would arise. On the other hand, a country needing certain imported raw materials which is in a sound financial and economic condition will not meet with great difficulties in acquiring what it needs from abroad—even if the quantities required are relatively large.

On the other hand, more serious difficulties may arise in the case of countries which, although they lack certain indispensable raw materials, must nevertheless, for demographic reasons, develop their industrial production and which are faced at the same time by financial difficulties (adverse balance of payments, lack of capital, shortage of foreign exchange). These difficulties tend to become more serious when the international movement of goods, capital and men is affected by crisis conditions.

In examining the problems of raw materials, the question arises of the extent to which the difficulties of certain countries are due to their financial and economic policy, or to their armament policy.

Some of these countries would have less difficulty if they devoted their resources to purely productive ends.

Similarly, it goes without saying that the movement of capital which certain countries need is gravely hindered at the present time by fears that any capital lent may be employed for non-pacific purposes.

* * *

In order that its conclusions should be well founded, the Committee clearly required a considerable volume of statistical material regarding the production of, and trade in, the raw materials, including foodstuffs. This task it entrusted to the Secretariat, and it takes this opportunity of expressing its extreme indebtedness to the officers concerned for the very valuable work which they have performed. In its essence, the work was one of compilation and summarisation of statistical material derived from other sources. The Committee did not feel that the publication of this material was necessary, but copies of it have been placed in the Library of the League, where they are available to the persons interested in special research.

In addition, the Committee invited one of its members, Professor Högbom, to prepare a memorandum calling attention to certain considerations which emerge from a study of those statistics, and his memorandum is attached to this report.[1]

Having this material at its disposal, the Committee was in a position to concentrate on what it regarded as its principal task—to ascertain what are the existing obstacles which restrict equality of commercial access to raw materials, to enquire into the real importance of those obstacles, and finally to present recommendations on the subjects considered. The outcome of these discussions is embodied below in the two principal sections of the report.

Nevertheless, the Committee considers that, in order that the principal questions which it has examined may be seen in their true perspective and in order to avoid misunderstandings such as have played only too important a part in public discussions of the problem of raw materials, it is necessary to bear in mind certain considerations of a general character, the most important of which it has endeavoured to indicate in the paragraphs which follow.

[1] See Annex I

I. As is pointed out in Professor Högbom's memorandum, owing to technical progress, the relative importance of certain individual raw materials undergoes changes of a lasting character which thereby profoundly affect the economic situation of individual countries.

The development of the steam-engine in the latter part of the eighteenth century and the early part of the nineteenth century raised coal to the position of being by far the most important of all industrial materials and consequently brought prosperity to those countries which contained important sources of coal, since coal is *par excellence* a raw material whose bulk-value ratio is so high that it cannot bear the burden of heavy transport charges. Coal still remains the most important individual raw material, but its supremacy is now being seriously threatened by mineral oil. The development of the internal combustion engine enormously increased the importance of oil and consequently impaired the position of coal. As the development of oil production increased, that of coal production diminished and with it the prosperity of the great coal-producing countries.

This is the most characteristic example of a long-term change in the relative importance of competing raw materials affecting the relative prosperity of countries producing those raw materials, but other examples could be found, and, with the progress of scientific discovery and invention, such changes are more rather than less likely to occur in future. The growing competition of synthetic with natural textile materials, to which Professor Högbom also refers, is another case in point.

II. The discussions which took place before and after the war show that the problem of raw materials, when it becomes acute, may arise in two very different forms according to the economic conditions of the moment. Immediately after the war and again at the present moment, in which a revival of economic activity is taking place, the complaints relate principally to the difficulties of consumers. A few years ago, in the depth of the depression, the question was how to save the producers of raw materials from ruin with which they were threatened through the catastrophic fall in prices.

Price movements of raw materials tend to be much more violent than those of manufactured goods. The reason for this is to be found in the relative inelasticity of raw-material production. For example, in the case of minerals, production is dependent on a very substantial capital outlay, and, in the case of plantation crops, a long period often elapses between the establishment of the plantation and the first crop.

The demand for raw materials, however, depends on the activity of the manufacturing industries which can be expanded or curtailed rapidly according to the general economic situation. Accordingly, in times of depression in industry, the supply of raw materials tends greatly to exceed the demand and then prices fall to uneconomic levels, sufficient (in the absence of regulation schemes) to discourage some part of existing production, while, on the other hand, when industry is active, the demand may soon outstrip the available production of materials, particularly if, during the slump, any substantial proportion of production has been shut down. The movement of prices in either direction is further influenced by alterations in the stocks held by consuming industries (which tend naturally to be kept low at a time when prices are falling and tend to be increased as soon as prices show an upward trend), and further by speculative purchases and sales to which the base metal markets are specially subject.

III. Public opinion is easily led to suppose that the existence of raw materials in a particular territory means that they are available for economic exploitation. These two aspects must not be confused and, in normal circumstances, it is the second which is of primary importance.

In this connection, reference should be made to the map (Diagram 8) and the observations thereon contained in Professor Högbom's memorandum. It is there pointed out that, for certain minerals the bulk of which is great in comparison to their value, anything more than a relatively small distance from the sea is an almost insuperable bar to exploitation. The same is true also of the cheaper and bulkier vegetable products, and a similar map could be constructed showing the economic limits of exploitation of vegetable products on given price hypotheses. Moreover, in this connection, the Committee desires to call attention to Diagram 9 in the memorandum, and the appended remarks. One of the most important elements in the selling-price of the cheaper raw materials is maritime freights.[1] When freights are high in relation to prices, the black and hatched areas on the map (Diagram 8), and on the similar map which could be constructed for vegetable substances, tend to contract more and more. On the other hand, when freights are low, these areas are enlarged.

Thus, for many forms of raw materials, the potential production of the great colonial areas in the interior of Africa is not commercially accessible, just as the potential production in the interior of certain sovereign States is equally inaccessible.

In making these remarks, however, the Committee does not overlook the fact that, in certain circumstances, considerations of economic profit may for some States be subordinated to preoccupations of a different character which may lead them to accept certain burdens if other channels for procuring raw materials are not open to them.

IV. As essential point for decision was whether foodstuffs and feeding-stuffs should be included in the scope of the enquiry as well as industrial raw materials. The Committee thought it useful to undertake a statistical study covering the whole field. So far as *production* is concerned, the statistics [2] show that the aggregate value of foodstuffs and feeding-stuffs produced in the world is much in excess of the aggregate value of industrial raw materials so produced. But the question of importance for the present enquiry is not so much the quantities produced as the quantities which enter into international trade. From this point of view, it is clear that, taking the world as a whole, far more foodstuffs are consumed in the countries in which they are produced than are exported. On the other hand, most important countries import substantial quantities of foodstuffs [3] and these imports are more essential to them than industrial raw materials. Without the industrial raw materials, the economic structure of such countries would be threatened, but without the foodstuffs their populations might be exposed to severe privation. Moreover, the question has an important financial aspect. The quantity of industrial raw materials which a country can import depends, not only on the price of those raw materials themselves, but also on the quantity and price of the foodstuffs which it is compelled by circumstances to import, since the purchase of these forms a first charge on its external financial resources. From a practical point of view, however, the Committee does not think that the problem of inequality of commercial access arises at the present time in relation to foodstuffs in such an acute form as in the case of industrial raw materials.

V. It will be remembered that, in the discussions of the raw-material problem in the period preceding the examination of this question at the Assembly, a great deal of attention was devoted to colonial raw materials; indeed, some part of public opinion

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[1] For example, under present conditions, a ton of cane sugar (not produced in the British Empire) sells in London for about £6 10*s*. The smallest amount that can have been paid in maritime freights alone on it is not much less than £1, and there are sugar-producing parts of the world from which, under present conditions, the freight on cane sugar would be not less than £2.

[2] See Diagrams 1 and 2 (Annex I).

[3] See Diagrams 3 and 4 (Annex I).

appeared to consider that the problem was predominantly a colonial one. In fact, some countries have exhibited a lively interest in the question of commercial access to raw materials produced in colonial and mandated territories.

The Committee reached the conclusion that most raw materials are produced wholly, or to a great extent, in sovereign countries. In fact, the raw materials which are typically colonial (*i.e.*, those which colonial territories alone produce or are in a position to produce) number only three—viz., palm oil, rubber and copra. Of these, rubber is a raw material of major importance for all industrial countries. The other two, palm oil and copra, form part of the large group of vegetable oils and fats (which are used both for human consumption and for industrial purposes) some of which are produced in many countries. These two commodities have no special uses for which other articles in the group are not equally suitable. A fourth product is found in abundance, but not exclusively, in the colonies—viz., tin. As for the other products of the colonies, they have to compete with similar products of sovereign countries, from which the great part of the supply is derived.

A calculation, which necessarily can only be a rough one, seems to indicate that, including production both for domestic consumption and for export, the total present production of all commercially important raw materials in all colonial territories is no more than about 3 % of world production, a substantially smaller percentage than is the proportion (12½ %) of the population of these territories to world population. Nor is the share of colonial territories in international trade much more important. In 1936, these territories provided 9.7 % of world exports and took 8.1 % of world imports. Of course, dominions and other self-governing territories have not been included in these calculations.

It should not, however, be concluded from these figures that the importance of colonies, as sources of raw materials, can be neglected.

The importance of a particular material is not indicated by its aggregate weight or value in international trade, but consists in the greater or less degree of indispensability which it possesses for the industry of the consuming countries. Rubber is a case in point. Moreover, it is necessary to take account of many factors, as, for instance, the special needs of each country and the extent to which it possesses the means to meet these needs, either on its own territory or elsewhere.

Finally, statistics can only indicate the present situation, and in the future there may be further developments. But whatever importance individual colonial products may have for particular countries, it is clear that colonial raw-material production does not represent more than a relatively unimportant proportion of total world production.

VI. Finally, there is a relationship between the growth of population and the need for raw materials.

The population of certain countries is increasing rapidly at the present time, but emigration has, generally speaking, been stopped. These countries have been deprived of the means by which, in the nineteenth century, they were enabled to surmount many difficulties. In such circumstances, industrialisation has become a matter of vital importance to them and, in consequence, they attach special weight to the question of access to raw materials.

However, the relationship between population increase and raw-material supply is not so closely connected with the national resources of any given country as with the development of international commercial relations.

* * *

It has been pointed out above that the Committee's particular duty was to examine, and if possible to pronounce upon, the complaints regarding difficulties in respect of raw materials which had come to its notice, and a preliminary examination of them soon disclosed the fact that these difficulties fall into two quite different classes. On the one hand, difficulties were felt regarding the *supply* of raw materials—that is, certain countries considered that, even when they were in a position to pay for all the raw materials they required, they either could not obtain them at all or were compelled to pay what was in their view an excessively high price for them. On the other hand, certain countries experienced principally difficulties in regard to *payment*—that is, they felt that, even when ample supplies were available, they themselves were, for reasons beyond their own control, unable to obtain the necessary foreign exchange to pay for their requirements.

Hence the report to the Committee is divided into two main chapters dealing with these two classes of difficulties.

EXAMINATION OF COMPLAINTS AND DIFFICULTIES EXPERIENCED WITH REGARD TO THE SUPPLY OF RAW MATERIALS.

I. Prohibitions and Restrictions on the Export of Raw Materials.

1. The Committee has examined the information which has been placed before it regarding prohibitions and restrictions on the export of raw materials and foodstuffs, and has found that they fall into various classes, which vary considerably in regard to the reasons for and the effects of the restrictions imposed. It thinks that it will be convenient if it examines each of these classes separately and submits its observations on them.

2. In the first place, many countries produce certain kinds of foodstuffs both for domestic consumption and for export. When harvests are short, these countries sometimes find it necessary to prohibit the export of their products until the next harvest, in order to retain sufficient foodstuffs in the country to feed the people. As an example, there is at present a temporary prohibition on the export of wheat, vegetable oils and other foodstuffs in various countries.

No complaints regarding prohibitions or restrictions of this character have been brought to the notice of the Committee, and it feels that it would not be possible to take serious objections to measures of this kind.

3. In the second place, instances have been brought to the notice of the Committee of prohibitions or restrictions on the export of industrial raw materials, with the object of retaining them for the use of domestic industry or of economising the natural resources of a country.[1] Such measures may be temporary or permanent. They may be prompted either by an industrial or a price policy or, particularly at present, by monetary considerations. Thus, certain European countries at present restrict or prohibit the export of scrap iron. The Committee has heard of general complaints on the subject of restrictions of this kind and also specific complaints that certain of these restrictions, particularly when they are applied intermittently, cause grave inconvenience to industries in neighbouring countries.

The Committee has found it difficult to formulate any conclusions universally applicable to restrictions of this kind. It does not think that it would be possible to contest the view that a country is entitled to a first call on its own resources for the benefit of its domestic industry. Moreover, it is unlikely that a country would depend on securing its supplies from a country which normally consumes the whole of its production of the commodity in question. Equally, it would be difficult to contend that, when there is a sudden and temporary shortage of a particular commodity, a country should allow supplies of that commodity to leave the country if it has reason to fear that it would be unable to cover its requirements otherwise.

4. But the Committee does not regard as proper the use of this power of prohibition or restriction, irrespective of the actual state of supplies of the commodity, simply for the purpose of putting pressure on a neighbouring country. No specific instances of such practices have been brought to the Committee's notice, but the impression undoubtedly prevails that the possibility of such abuses exists. The Committee therefore thinks that it would increase the confidence of the world if Governments would undertake not to employ their powers in this way.

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[1] These restrictions sometimes take the form of export duties, but, in view of their purpose, can be considered as falling within the scope of this section of the report.

5. When the object of restrictions on the export of raw materials (including export duties) is to bring down internal prices, the Committee recommends that Governments should, in appropriate cases, adopt the alternative policy of lowering import duties.

6. In the third place, one instance has been brought to the notice of the Committee of the prohibition of export in order to preserve a monopoly or quasi-monopoly of the production of a particular plant. The particular plant which has been mentioned is the abaca palm, the source of manila hemp, of which seeds and planting-material may not be exported from the Philippines, the principal country of production for hemp of this quality.

No specific complaints have been brought to the notice of the Committee on this subject; and it thinks—and indeed, experience has shown—that prohibitions of this kind are unlikely to be effective for very long if they are inflicting serious economic injury on other countries. Nevertheless, as a matter of principle, it regards them as open to objection.

There is, however, one case in which other considerations must be taken into account. Certain regulation schemes—for example, those relating to rubber and tea—include a prohibition of the export of planting-material to countries not parties to the scheme as an integral part of the schemes. The propriety of such a form of prohibition is of course subsidiary to the major question of the utility of the schemes themselves, a subject which is discussed below.

7. In the fourth place, the Committee has been informed of the existence of prohibitions or restrictions on the export of raw materials for the purpose of preserving for the country of production (or, in the case of colonial territories, the metropolitan country) the right to apply some form of processing to the raw material in question before export. (In some cases, as in the second class referred to above, the restriction takes the form of a restrictive export duty.) Exporting countries contend that this class of restriction is due to the fact that various countries make it a practice to place high import duties on articles to which the simplest form of processing has been applied in order to maintain in their own territory processing industries, which, without such protection, could not have established themselves. Indeed, it has been contended that a country which uses large quantities of a particular raw material can in this way secure the processing business, not only for supplies required for its domestic market, but also for supplies required by the rest of the world, by driving the processing industry in the country of production out of existence.

8. The Committee has not attempted to formulate general principles on this subject. It feels that an export restriction of this kind cannot, in general, be justified; nevertheless, the Committee would find it difficult to condemn such a practice on grounds of a general principle. If, in particular cases, restrictions of this kind are felt by some country to be embarrassing, they could appropriately form the subject of negotiations between the countries concerned.

9. In the fifth place, it is an essential part of almost all international regulation schemes relating to the supply of raw materials that the export of the regulated commodity is restricted by the Governments of the participating countries. This restriction is an incidental part of the regulation schemes in question and can most conveniently be discussed in the section of the report dealing with such schemes.

10. In the sixth place, apart from international regulation schemes, certain countries attempt to regulate the trade in commodities of which they are either the principal, or very important producers. For instance, in the Netherlands East Indies, there are

restrictions on the export of cinchona bark; and the Government of Brazil controls the export of coffee. In so far as such restrictions or control are aimed at withholding from the export market, not goods which the rest of the world requires, but goods which it does not require—or, in other words, to regulate the market, to secure reasonably remunerative, but not excessive, prices for efficient producers and to ensure that no unmanageable stocks are built up—it does not appear to the Committee that such restrictions are open to serious objection. It cannot be to the advantage, even of consumers, that markets should be allowed to fall into a state of complete disorganisation, for history shows that market disorganisation leads inevitably to cessation of production, scarcity and high prices.

On the other hand, it would clearly be undesirable that restrictions of this kind should be operated in such a way as either to starve the market and to raise prices to unreasonable heights, or to discriminate between various purchasers. Indeed, in so far as consumption can be expanded, a fall in price may well be the best way to relieve the market of a temporary surplus.

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11. To sum up, the Committee considers that, while certain prohibitions and restrictions can be justified, when they are of the nature of defensive measures, serious objections can be taken to prohibitions or restrictions which are designed to apply pressure to other countries, to preserve uneconomic industries or to maintain an artificial level of prices, either by creating an excessive supply in the internal market, by starving the market or by maintaining monopolies or quasi-monopolies. The Committee has not been able to find any substantial evidence of such impediments; but, in so far as they may exist, it desires that they should be removed at the earliest possible moment and therefore recommends that all nations, either by autonomous action or by an international convention, should bind themselves not to use prohibitions or restrictions on export for such purposes.

II. Export Duties.

1. Export duties on raw materials, like prohibitions and restrictions, fall into several classes.

2. In the first place, export duties are used as a form of restriction on export either for the purpose of reserving domestic raw material for domestic industry (the second class of restrictions mentioned in the preceding section) or for the purpose of protecting a domestic processing industry (the fourth class of those restrictions). Such export duties, constituting merely a form of restriction, or, if they are excessively high, a form of prohibition, have already been discussed in the preceding section of the report.

3. In the second place, export duties on particular products are imposed both in metropolitan countries and in colonial territories—such as, for example, countries parties to the international rubber regulations scheme—for the purpose of establishing a fund for the improvement of the industry concerned and for increasing the demand for its products. Such levies are invariably small, and it seems incontestable that they are borne by the producer of the goods and not by the purchaser or consumer. No complaints regarding such levies have been brought to the notice of the Committee.

4. The Committee, in the third place, has directed its attention to instances of export duties imposed both in metropolitan and in colonial territories for purely revenue purposes. In certain conditions, export duties on raw materials constitute the most convenient and

equitable form of taxation. Thus, in primitive communities, they serve as a form of income-tax, levied on one of the principal sources of income, but at a rate almost invariably much lower than the rate of income-tax levied in more advanced communities. If such export duties were not imposed, they would have to be replaced by some form of direct taxation, possibly one less equitable in its incidence, or by import duties, which, in addition to this defect, would, in the opinion of the Committee, operate as a more serious barrier to international trade. Again, export duties on mineral products are merely a form of royalty designed to secure for the community its equitable share of the profits of the mining industry. The same may be true of export duties on other products, the exportation of which involves a depletion of the natural resources of the country.

5. Finally, the Committee's attention has been drawn to the creation of export duties which are considered discriminatory either because different duties are charged on goods exported to different foreign destinations or because lower duties are charged on goods exported from a colonial territory to its metropolitan country than on those exported from that territory to other countries. The Committee is aware that objections have been made to measures of this kind, but has no knowledge of any complaint in sufficiently precise terms to enable it to determine whether any real discrimination, such as it naturally could not approve, is involved.

III. Development of Natural Resources.

1. The Committee now comes to the subject described in its interim report as " The Regime of Concessions ". On reconsideration, it appears to it that this phrase is unduly restrictive and is inapplicable to certain aspects of the subject. What it was really intended to express was the much wider conception of the development of natural resources.

2. Economic advancement, indeed, depends to a large degree on a progressive development of these resources. Immense progress has been made in this direction, especially, during and since the nineteenth century, and has led, through improvements in transport and technical processes, to a rapid expansion of economic activity with beneficial repercussions in all countries.

3. But this progress has not been uniform; while some countries command natural resources in excess of their needs; others are less favoured; moreover, in some of these latter the population is still steadily increasing. The Committee has not found it within its competence to discuss population questions as such, nor the question of the adjustment of population to geographical and economic conditions and industrial changes. For countries with rapidly increasing population, however, one solution of the resulting difficulties can be found in industrialisation, especially when international migration is at a standstill. Since, however, this industrialisation can only be built upon a basis of imported raw materials, it is of vital concern to these countries that they should be assured of unrestricted supplies of raw materials and of a market for their increased output.

4. Such supplies can normally be obtained by purchase from abroad; but, in making payment, some countries encounter difficulties, which are examined in another part of the present report, owing to a shortage of foreign exchange. They would experience less difficulty if they could take part in the development of sources of supply in foreign countries. Nevertheless, it should be borne in mind that the development of new sources of supply requires, in the initial stages, an investment of capital which may, for a considerable period, be unremunerative. Such development, involving at least some expenditure in foreign exchange, may therefore involve a greater demand on financial resources

than direct purchase from existing sources of supply. It is therefore for the countries concerned to consider whether the development of such new sources of supply would be a real advantage to them.

5. The method of development which would be appropriate varies in each case and may be subject in some cases to limitations required in the public interest, but should not be hampered by unjustifiable impediments.

Certain members have laid stress on the special importance of finding means for removing the obstacles which, in certain overseas territories rich in raw materials, stand in the way of the establishment of trading firms, agencies and finance undertakings and of branches of such undertakings.

6. It should be recognised that the Governments of countries which are important suppliers, actual or potential, of raw materials have a responsibility not unreasonably to hamper the development of their raw materials. Their legislation on this subject should not be framed in such a way as to protect their own interests only, but should also take into account the interdependence of all countries.

7. The position in sovereign countries and that in colonial territories must be discussed separately.

8. So far as sovereign countries are concerned, the Committee has found considerable differences in the policies followed. The Committee feels that, in principle, a rigid restrictive policy is impossible to defend. It may, however, be necessary—for political, for economic' and for social reasons—for Governments to reserve certain forms of enterprise entirely to nationals of the country: and also that they should reserve the right to exercise a measure of control over the development of their natural resources by foreigners. In this connection, mention must be made of the harmful results that might follow from a sudden influx of foreign capital or from a mass immigration movement upon the existing organisation of a country. The Committee considers that it is not in a position to deal with this question; but it recognises that, where a large-scale investment of capital or the transfer of a substantial labour force for the development of raw materials in a foreign country is contemplated, it may require a preliminary understanding between the Governments concerned. These matters might form the subject of bilateral or multilateral agreements.

9. So far as colonial territories are concerned, analogous principles are applicable, so far as is necessary to safeguard the interests of the local populations. It must, in fact, be remembered that metropolitan and subordinate colonial Governments have special obligations of a social character to colonial peoples which, in certain matters, must prevail over their obligations to their own peoples and to other countries; and the existence of these obligations has frequently been emphasised by the colonial Powers.

10. Governments which control colonial territories are in a position to secure special privileges in the colonial territory for nationals of the metropolitan country which may be withheld from other nationals. The practice of colonial and similar Powers in this respect is not uniform. In the Belgian, British, Dutch and Portuguese Colonial Empires, in parts of the French Colonial Empire (but only so far as agricultural and forestry concessions are concerned) and in the overseas territories controlled by the United States of America, no special privileges are reserved for the nationals of the metropolitan countries. The one exception in the British Colonial Empire relating to petroleum resources will cease to exist in September 1938. In other colonial territories, it is understood that certain special privileges are reserved for nationals. Moreover, experience shows that, even where such privileges do not exist, metropolitan countries normally enjoy a predominant position in the exploitation of the natural resources of their colonial territories,

being favoured by all the links binding them to one another, and especially a common language, long-established commercial and financial relations and cultural affinities. It is stated that, even where there is no formal discrimination, advantages are sometimes secured for the nationals of the metropolitan country by deliberate policy or administrative action.

11. In these circumstances, the Committee feels that, so far as colonial territories are concerned, where certain privileges are at present reserved to the nationals of the metropolitan country or certain advantages secured to them by deliberate policy or administrative act, a progressive modification of this state of affairs in a more liberal direction should be effected. The Committee recommends that the Governments concerned should be invited to consider the possibility of taking action to this end.

12. Apart from the question of discrimination referred to in the preceding paragraph, it was pointed out to the Committee that certain countries are anxious to take part in the development of the natural resources of colonial territories which are not yet exploited. Certain members of the Committee expressed the hope that the principle of unrestricted access to such resources might be applied as liberally as possible in these territories; and that nationals of countries poor in raw materials of colonial origin might be given direct access to natural resources by means of concessions which would afford them the opportunity of exploiting the necessary materials with their own capital or labour, without thereby creating any discrimination against nationals of other countries.

They also suggested that the regime of the " open door " which prevails in the Congo Basin by virtue of the treaties, and is also in force in territories under A and B mandates, should be extended as regards the development of natural resources to other territories that are sparsely populated and whose resources are inadequately developed.[1]

To avoid any misunderstanding, the Committee wishes to make it clear that these proposals are not designed to alter the political status of colonial territories, for example by converting them into mandated territories: Certain members consider, however, that, without altering the political status of the territories, it would be possible to frame an international convention in the sense indicated above. Other members, however, have pointed out that the Governments controlling such territories cannot be invited to assume international obligations which might conflict with their duties to the local inhabitants to which reference has been made in an earlier section of this report.

The Committee suggests that the Governments controlling the territories concerned should be invited to make unilateral declarations to the effect that they will facilitate the development of the natural resources of the territories under their control as far as possible consistently with the duties which they owe to the local inhabitants.

IV. International Regulation Schemes relating to the Supply of Raw Materials.

1. The Committee has examined a number of schemes for regulating the supply of raw materials (including certain foodstuffs) and has found it desirable to draw a clear distinction between schemes concluded and carried out by Governments, or operated under Governmental control, and those which are purely private in character.

2. While regulation schemes relating to industrial products, commonly known as cartels, have been in existence for many years, those for regulating the supply of raw

[1] Some members have stressed the view that it does not lie within the competence of the Committee to consider an extension of the application of the principles of the mandate system to colonial territories.

materials are a comparatively recent development. The circumstances which have led up to such schemes have invariably been the accumulation of unmanageably large stocks and the consequent fall of prices to uneconomic levels.

3. The earliest regulation schemes were designed solely to raise prices and were operated in such a way as to intensify or relax the restriction on the production or export of the regulated commodity in accordance with the price of that commodity at predetermined dates. Experience having shown that this form of regulation was open to various objections, under more recent schemes the intensification or relaxation of restriction is determined by reference, not to the current price, but to the volume of available stocks of the regulated commodity.

4. The regulation schemes which are at present operated by Governments or under Governmental auspices are those relating to tin, rubber and tea, together with the sugar scheme, which is the result of an international agreement recently concluded. The declared object of these schemes is to reduce stocks to a normal level, to maintain them at that level, and to maintain a fair and equitable price for reasonably efficient producers.

5. It is to be remarked that the commodities to which these schemes relate are produced principally or entirely by communities commanding small capital resources, whose purchasing power had been almost entirely destroyed, when those schemes were introduced, by the low level of prices which prevailed. Experience has shown that such communities, when prices rise, are very quick to increase their purchases, which consist almost entirely of imported goods, principally manufactured. Schemes of this kind, in so far as they restore the purchasing power of communities which are normally large purchasers of imported goods and thus lead to a marked increase in their imports, are to be welcomed as a valuable means of restoring international trade.

6. It appears to the Committee that, thanks to the Governmental control of these schemes, the power of determining the degree of restriction is placed in the hands of authorities who can look beyond the immediate interests of the producers to their ultimate interests, and also to those of the world at large. This must give the consumers a confidence they could never feel if the whole control of the schemes was vested in persons actually engaged in production. The Committee has noted with satisfaction the fact that nearly all these schemes now provide for representatives of the consumers to be associated with the operation of the scheme, either in an advisory capacity, as in the case of tin and rubber, or as constituting part of the managing body, as in the case of sugar. It also notes that the bodies managing these schemes make it their practice to publish the fullest possible information regarding their proceedings and the statistical position of the commodities which they control.

7. As regards regulation schemes of a purely private character, such as those relating to copper and other base metals, the Committee does not feel that the information in its possession is sufficient to enable it to express a decided opinion about them. It appears to it, however, that the considerations which have made it desirable to associate representatives of the consumers with the management of the Governmental schemes are no less cogent in the case of private schemes. It considers that it should be an essential part of all such schemes that provision should be made for the representation of the consumers and for adequate publicity.[1] It is also thought that the principles of non-discrimination

[1] 1. As regards the important question of publicity, the Committee has noted with satisfaction that the governing bodies of recently created Government-controlled schemes make available to the public and consumers more information regarding the terms of the agreements themselves and of their operation than was done in the past. It is of the opinion that similar publicity is desirable also for all cartels, monopolies or

and reasonableness of charges which underlie the branch of Anglo-American law known as the public utility law might usefully be applied to the operation of these schemes.

8. It has been suggested to the Committee that Governments should insist upon themselves assuming control of all such schemes. The Committee is aware that the exercise of such control involves responsibilities in certain circumstances, which Governments may hesitate to accept. But it is impressed by the argument that consumers (persons and countries) feel a confidence in the administration of schemes under Government control which they do not feel in the administration of schemes of a purely private character. It therefore recommends that the matter should receive the very serious consideration of all the Governments concerned.

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9. The Committee received a number of criticisms of regulation schemes. For the most part, they were very general in character and were based on the general contention that any restriction of production must be wrong; in so far as they were specific, they were to the effect that prices had been raised to unreasonable levels.

10. The Committee accepts as valid the contention that the governmental regulation schemes have restored the purchasing power of large communities and have thus increased substantially the volume of international trade. No evidence, moreover, has been produced to show that the schemes have resulted in actual shortages of supplies of raw materials.

11. On the other hand, it is difficult to deny that prices of some regulated commodities have risen to unreasonable levels within a recent period, but this cannot be attributed merely to the operation of regulation schemes. Such rises have not been confined to regulated commodities, substantial falls have since occurred, and the period during which such excessively high prices have prevailed is very short compared to the period during which excessively low prices prevailed. Nevertheless, the fact remains that the professed object of the schemes is to maintain prices at a fair and equitable level and the Committee accordingly considers that a particular obligation rests upon the bodies administering such schemes to provide themselves with instruments which will enable them to prevent prices from rising to unreasonable levels, or, if they do, to create conditions which should lead to a fall. The question of what constitutes a " reasonable " price is obviously one which admits of no single or universally applicable answer, since it depends upon a number of circumstances which are constantly changing. The Committee considers, however,

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quasi-monopolies dealing in important raw materials entering into international trade. Such information would go far to remove the suspicions of consumers, especially in other countries, that the agreements are operated solely in the interests of the producers. It will be remembered that the World Economic Conference of 1927 (document C.E.I.44(1), pages 41 and 43) considered this same problem and approved proposals for compiling and publishing the relevant data.

2. Even if a Government is reluctant to take control of cartels and similar organisations operating in its territory, it can hardly feel objection to requiring the publication of information on the operation of these organisations, in the interests of their own consumers as well as those of other countries.

3. So far as statistical information is concerned, where the bodies managing the schemes are themselves in a position to publish a statistical bulletin, as is done by the International Rubber Regulation Committee for example, this is probably the best arrangement. But where this is impossible, the Committee thinks that adequate publicity cannot be provided by Governments acting singly, but that the work of the Economic Intelligence Service of the League might usefully be extended with the above end in view.

4. In addition to the publication of statistics, the Committee would like to see full publicity given to the terms of organisation and methods of operation of all agreements, cartels and monopolies controlling supplies of raw materials and is of the opinion that consideration should be given to the means to bring about co-ordinated action by Governments for this purpose.

that, as further experience is obtained, the bodies controlling the various schemes should reach a position in which they will be able to come to an agreement on the subject with the consumers' representatives with whom they are associated.

12. Even, however, if agreement is possible as to what is the desirable price-level to aim at at a given moment, there can be no question of stabilising raw-material prices at any given point; in the first place, owing to the fact that the demand for such materials may expand or contract rapidly, whereas their production, particularly in the case of vegetable products, cannot be expanded or contracted with the same rapidity; and, secondly, owing to other influences external to the market. In the absence of any system of regulation, it is probable that prices of commodities such as rubber, tin, etc., would undergo fluctuations more violent than those recently experienced. Thus the remedy for these variations in price should be sought in the improvement of the regulation schemes.

13. There is no doubt that a control based purely on the regulation of output is insufficient to ensure stability of prices, owing to the fact that what can reasonably be regarded as an adequate stock in times of moderate industrial activity is insufficient when industrial activity rises to a higher level; furthermore, because a delay inevitably occurs between the decision to increase production and the resultant actual increase in production.

It has been suggested that for these reasons it is very desirable that " buffer stocks " of regulated commodities should be formed, which would be segregated in normal times, but could be placed on the market immediately if prices rose to an unreasonable level.

The matter is a highly technical one involving a number of difficult questions of an administrative and of a financial character, and the Committee therefore invited two of its members specially competent in this sphere to prepare a memorandum on the subject.[1] It will be seen from this memorandum that the constitution of a buffer stock on the sole responsibility and at the sole risk of the producers themselves would avoid many difficulties inherent in any other arrangement, but that it is unlikely that such an arrangement will be made in many cases.

In these circumstances, the only alternative appears to be the constitution of a buffer stock by the joint co-operation of certain producers and certain consumers on the lines set out in the memorandum.

The Committee does not feel able to express a decided opinion whether it will be possible to surmount the various difficulties which would be encountered in framing such a scheme, but it feels that the proposal is one which deserves the most serious consideration of all bodies controlling regulation schemes.

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14. To sum up, the Committee, while it would not wish to state that all regulation schemes in the past have been well conceived or beneficial to all the interests concerned, considers that the Governmental regulation schemes relating to raw materials now in operation have, generally speaking, been an important factor in the improvement in economic conditions experienced in producing countries during the depression, as well as in the development of international trade. But it feels that it is very important that consuming countries should be given every assurance that the schemes will be operated in a reasonable manner. With this end in view, it considers that every such scheme should

[1] The text of the memorandum will be found in Annex II.

make adequate provision for effective representation of consumers and for publicity, should be subject to the greatest degree of Governmental supervision which the circumstances admit, and should be so framed that the controlling body is placed in a position to take immediate and effective action in the event of an unreasonable rise of prices or other effects prejudicial to the consumers.

15. In the eyes of the Committee, it would certainly go a long way towards allaying the apprehensions of less-well-endowed countries if the above principles were generally accepted by Governments and given effect to—particularly as regards raw materials of fundamental importance—either by the autonomous action of the States concerned or by international understanding.

V. Monopolies.

1. Lastly, the Committee considered monopolies. This term is applied to very different things; but it refers primarily to fiscal monopolies—that is to say, the exclusive right which Governments sometimes reserve to themselves to produce or import and sell certain products, in order to levy a tax upon them. The commonest instances are those affecting tobacco and salt. Monopolies of this kind fall within the sphere of internal policy; and the Committee therefore felt that it was not called upon to subject them to any particular examination.

2. Monopolies resulting from a coalition of producers are, fundamentally, of the same character as those resulting from producers' agreements or cartels, and have previously been examined under this head by the Committee.

3. Another kind of monopoly, closely resembling that just mentioned, is constituted by arrangements regarding the sale of certain products, for the purpose, for instance, of marketing a crop or meeting a special situation. Thus the Netherlands Government has conceded a monopoly of the wholesale trade in sugar from the Netherlands Indies to an association under Government control, in order to prevent large quantities of sugar from being thrown upon an already weak and nervous market. This, then, also comes within the sphere of agreements and schemes for the orderly sale of raw materials.

4. There is one other form of monopoly which needs to be briefly considered here —namely, the natural monopoly of the production of a certain raw material possessed by a State. Examples are found in helium gas in the United States of America, jute in India, cinchona bark in the Netherlands Indies, and camphor in Japan, and certain minor minerals elsewhere. At first sight, it is undeniable that such monopolies may give rise to apprehensions in consuming countries. Nevertheless, these fears should not be exaggerated. Such natural monopolies are extremely rare. Moreover, it is common knowledge that the monopoly price cannot rise above a certain level without the risk of reducing consumption and of provoking the adoption of substitutes. It is therefore to the interest of the monopoly holders not to demand too high a price for their products.

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5. To sum up, the Committee is of opinion that the few natural monopolies in existence do not constitute real obstacles to the circulation of raw materials. Furthermore, so far as the Committee is aware, no complaint or claim has been made in regard to this matter.

EXAMINATION OF COMPLAINTS AND DIFFICULTIES EXPERIENCED WITH REGARD TO THE ACQUISITION OF, AND PAYMENT FOR, RAW MATERIALS.

1. In normal times, countries supplying mainly manufactured goods—which usually have a developed economy and, in many cases, important invisible resources—are better able to accumulate foreign exchange than countries producing mainly raw materials and agricultural products. In fact, it was not the inability of the manufacturing countries to acquire foreign exchange, but the inability of the raw-material-producing countries to do so, which was one of the principal symptoms of the great depression, of which the effects have not yet disappeared. There will always be differences between the movement of supply and demand for raw materials and that for industrial products; and these differences affect their price relations; but, in times of crisis, conditions of exchange operate in favour of industrial countries.[1] These countries have recently lost a part of this advantage, owing to the rise in raw-material prices, but raw-material prices are still, in general, relatively lower than those of manufactured goods.[2] Thus the manufacturing countries ought not to have any special reason to complain of difficulties in obtaining supplies of raw materials; and, in fact, many of them have never experienced any difficulties. If, in the circumstances, certain countries have encountered such difficulties, it would appear to be due to a change in their relative competitive position as compared with their position in normal times. The complaints, in fact, come in the main from certain great industrial countries of Central Europe and the Far East. Apart from these cases, certain complaints are also made by the countries of Central and Eastern Europe which are in the main dependent on the export of agricultural products. In this connection, it should be mentioned that, if the overseas countries which have also felt the effects of the agricultural crisis have not experienced the same difficulties in regard to the supply of raw materials, they have nevertheless had to restrict considerably their imports of manufactured goods.

2. The situation differs widely from country to country, and no general description of it would be accurate without qualification in particular cases. The influence of the depression on the economic structure of individual countries, and especially on their balance of payments, has not been uniform. Generally speaking, it may be said that creditor countries possessing large financial reserves have been able more easily to correct an adverse balance of payments and have not met with the same difficulties in supplying themselves with, and paying for, the raw materials they needed. In order to do this, however, they often imposed restrictions which made it difficult or impossible for the debtor countries to maintain, still less to expand, their exports. The position of the debtor countries was aggravated by the cessation of the flow of fresh capital, which was a natural result of the depression. Moreover, in countries where the borrowing took the form of

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[1] Movement of prices in international trade (1929 = 100):

	1929	1932	1933	1934	1935	1936
Foodstuffs	100	52.0	45.5	41.5	40.5	42.5
Raw or semi-manufactured articles	100	44.0	40.0	39.5	39.5	41.5
Finished products	100	64.0	56.0	50.0	48.0	48.0
All articles	100	52.5	46.5	43.5	42.5	43.5

[2] Thus, while the price index for manufactured articles exported from the United Kingdom during the first quarter of 1937 was 81 (1929 = 100), the corresponding index for raw materials imported into the United Kingdom was 74.

short-term loans, the sudden withdrawal of short-term capital previously available made the situation worse. The result was that the net balance of the capital movement was suddenly turned into a debit item in the balance of payments of debtor countries. Certain debtor countries thus found themselves compelled to introduce some form of currency control—affecting either all financial transactions or only the movement of capital or of goods—in order to preserve the artificial equilibrium of their balance of accounts and to earmark such foreign exchange as they could still obtain for their most vital economic needs.

3. In certain countries, difficulties caused by the withdrawal of capital have been accentuated by the fact that the high prices of their products have limited their export opportunities and consequently the amount of foreign exchange available for the purchase of raw materials. In spite of this internal rise in prices, they have maintained their currencies at a high parity as compared with those of their competitors, and none of the measures which they have taken (exchange control, clearing agreements, subsidies, etc.) could ease the situation. It would be interesting to speculate whether, in lieu of exchange control and export bounties, an adjustment of the foreign value of their currencies to the very high internal price-level would not have placed more foreign exchange, available for the purchase of raw materials, at the disposal of some of these countries.

4. The difficulties in procuring a number of raw materials have been increased by the heavy expenditure on armaments incurred by most countries. It has been pointed out that the demand for raw materials for armament purposes has been one of the factors which have led to a sharp increase in prices and a shortage in the supplies available. It is true that countries commanding ample financial resources have no serious difficulty in obtaining raw materials for armament purposes, but, even in these countries, economic progress is indirectly handicapped by the fact that their industries are partly diverted from manufacturing for export to manufacturing for unproductive purposes. But the situation is much more difficult for countries which do not dispose of a large amount of foreign exchange. If these countries employ their reduced supplies of foreign exchange available for raw materials primarily for purposes of armaments, they may well have difficulty in obtaining the raw materials required for normal purposes.

It is naturally not within the scope of the Committee to attempt a criticism of the armaments policy of any particular State. The armaments programmes of all countries are dictated by what they believe to be the legitimate necessities of defence. Nevertheless, the Committee would be failing in its duty if it did not point out the obvious fact that the difficulties now experienced by certain States in paying for raw materials would immediately be alleviated of a political settlement were forthcoming which would permit them to reduce their present armaments expenditure. As a corollary, it may be added that, provided such a limitation of armaments expenditure could be achieved, there would be great possibilities for a revival of international trade, which could be assisted by other countries in various ways indicated in a later section. Such a trade revival would be calculated by itself to promote the removal of the present obstacles to payments, gradual though this process would undoubtedly be. In any case, it is only by co-operating in the restoration of international trade that the countries now in difficulties can hope to recover their former prosperity and to secure an improved standard of life for their people.

5. This situation has, in some cases, led the countries concerned to seek, in the production of substitutes, a remedy for their temporary difficulties in importing raw materials. But the production of these substitutes involves large capital expenditure, and in so far as they are uneconomic—*i.e.*, more costly and less efficient than the natural products—and if the purpose of their production is self-sufficiency rather than economic

progress, no real improvement in the situation will result. Although a reduction may be made in the foreign-exchange resources required for the importation of raw materials, a charge will be imposed on the internal economy of the country and its capacity to export will be adversely affected.

6. A group of countries which finds itself, as a result of the crisis, in a different position is that which comprises, in particular, the European countries whose economic structure is largely based on production and export of agricultural goods.

In all those countries, the depression which began in 1929 caused abrupt and fundamental change in the structure of the balance of payments. Before the depression, equilibrium was maintained, thanks to the income from the export of agricultural commodities and from a steady inflow of short- and long-term capital. In some of these countries, the equilibrium of the balance of payments was further assured in an important measure by funds sent home by emigrants, an important factor for other countries also, but particularly for the countries of the type considered. The depression led to a complete alteration in the position in regard to exports, to capital movements and to emigrants' remittances.

As a result of the depression in the countries of immigration, the remittances from emigrants dropped considerably; in some cases emigration was almost entirely stopped, while the amount of foreign currency derived from agricultural exports shrank from year to year during the earlier phase of the depression to little more than a third of its previous value. When exporting countries attempted to meet this situation by increasing the quantities exported, they found that the market could not absorb the increased supplies of goods which they wished to export, except at very low prices, and in some cases their efforts were largely frustrated by the quantitative regulations introduced by the majority of importing countries. In addition, some of the latter introduced exchange control followed by the regulation of trade by means of clearings, so that exporting States subjected to the system of clearing agreements could no longer secure from their trade with such countries either a balance of trade in their favour or free exchange for the purchase of raw materials. On the other hand, it must be remembered that several countries without exchange control, when making clearing agreements with these exporting countries, accepted special stipulations in order to ensure to those countries a certain amount of free exchange as the result of a surplus of their exports. It is desirable that similar arrangements should be adopted wherever possible.

It may, in general, be said that European countries in question all depended upon favourable balances of trade with other European countries, in order to finance their purchases of raw materials from the overseas countries which bought very little from them in return. Since their European trade—partly as a consequence of the serious fall in prices of agricultural produce during recent years—no longer supplies them with the necessary foreign exchange, a difficulty in paying for raw materials from overseas is inevitable.

7. Whatever may be the reasons which lead a country to institute foreign-exchange control, there can be no doubt that this expedient frequently leads to fresh difficulties which hinder countries adopting it from returning to permanent equilibrium. Such control tends to raise the home price-level to such a degree that the export trade is seriously hampered. In its turn, the decrease in exports automatically reduces the amount of foreing exchange which should be available. Furthermore, exchange control, and particularly restrictions on capital transfers, shakes confidence, is an inducement to exporters to refrain from repatriating payments received in foreign exchange, and keeps away foreign capital in the form of commercial or other credits. When, as in the majority of cases, a clearing system is superimposed on exchange control, the proceeds of such export transactions as can still be carried on are paid into blocked accounts which must be used for

the purchase of the goods available in the importing countries (frequently finished articles), instead of for the purchase of raw materials elsewhere. Moreover, an internal policy of inflation or the burden of social charges may affect the balance of payments, even when these circumstances are not accompanied by exchange control. In all these cases, a country's internal policy may exert a vital influence upon its capacity to acquire raw materials from abroad.

8. Some of the countries concerned may, however, plead that they were forced to adopt exchange control and clearings in consequence of restrictions imposed by other countries on imports; some have found that, despite the devaluation of their currencies, they were unable to abolish their exchange restrictions. So long as many important countries, particularly in Europe, maintain exchange control or clearings, or both these systems, it will obviously be difficult, if not impossible, for their suppliers, whose trade must largely be with these countries, to adopt a completely free system. The general network of exchange controls, clearings, quotas and prohibitions cannot therefore be abandoned as long as no action can be taken on a sufficiently wide scale to enable the countries concerned to overcome the existing obstacles. The difficulty has been accentuated by the tendency to self-sufficiency which has developed in many countries of Europe and which has had specially far-reaching effects on the economies of the Central and Eastern European countries. Further, though it must be recognised that the United Kingdom tariff has not prevented a very substantial increase in imports to the British market, the abandonment by the United Kingdom of the system of free trade and the introduction of protection have undoubtedly influenced unfavourably the balance of payments of the European countries which in the past depended largely on free entry into that market.

9. In this connection, it should be mentioned that the great colonial empires and political systems of a comparable character have tended during recent years to strengthen more and more the commercial ties which unite their various constituent parts; this tendency has necessarily affected the rest of the world, although, generally speaking, these political systems have no exchange restrictions and though their economy cannot be regarded as self-sufficient.

The position varies in different cases. In the British Empire, what principally affects other countries is the system of mutual preferences which prevails in the United Kingdom, the Dominions, India and certain parts of the Colonial Empire. The United States maintains a special Customs regime with her overseas territories, the Philippines and Cuba and, apart from this, introduced a particularly high Customs tariff at the beginning of the depression. Again, France, Portugal and Japan are all united with their overseas territories by systems of mutual preferences and, in some cases, by a form of Customs union which, of course, represents a much closer network of commercial relations than a preferential system.

The effect of these restrictions on trade with foreign countries varies in each case. The preferences granted by countries producing raw materials affect principally suppliers of manufactured goods. The preferences granted by the United Kingdom principally affect suppliers of foodstuffs. The preferential system of the United States and her associates is less embarrassing to the rest of the world than the height of her tariff; but the United States is so important a potential market for the rest of the world, particularly since she became a creditor country, that any restriction imposed by her is severely felt by other countries. The preferences granted by France to her oversea territories have also been an embarrassment to certain of her former suppliers, while sometimes representing a sacrifice for the home country.

Any preferential system must tend to have some adverse effect in the countries to which it does not apply; nevertheless, its restrictive effects on trade should not be exag-

gerated. For example, the British Colonial Empire as a whole sends 50% of its exports to foreign countries and takes 58% of its imports from those countries. But the development of preferential systems does not accord with present efforts to mitigate restrictions on international trade, and, in certain cases, it may cause indirect difficulties for countries requiring raw materials. It is to be hoped that the Governments concerned will be willing to consider such cases as part of a general effort to relax trade restrictions.

In saying this, the Committee does not mean to express any opinion regarding the efforts being made by certain European countries to arrange regional preferential systems with a view to improving their economic position; but it notes that other countries, in Europe as well as in America, have been successful, without special preferences, in extending their foreign trade.

10. The Committee has devoted particular attention to the effects of the cessation of capital movements. Before the depression, many debtor countries had recourse to foreign long- and short-term capital, which help to make good the deficit in their balance of payments. Sometimes, even, the influx of new capital in a year exceeded the reserves of the bank of issue of the country concerned. The sudden cessation of foreign lending and the attempts to repatriate as quickly as possible the loans made in the period 1924 to 1928 undoubtedly precipitated the financial crisis of 1931, as most of the countries concerned were quite unable to finance this repatriation, even by making use of their central banks' reserves of gold and foreign exchange. Similarly, the almost complete disappearance of international credit led to changes in the trend of trade. This led to defaults, " standstill " arrangements and exchange restrictions, which had a deterrent effect on investors and are largely responsible for the fact that international lending to these countries has not yet been resumed. Moreover, political apprehensions accentuate the purely financial difficulties, particularly for long-term lending, where investors must be assured of reasonable political stability for some time ahead. These difficulties cannot be solved by purely technical measures, which will remain ineffective as long as the underlying conditions which brought about the collapse of credit are unremedied.

11. The Committee notes that the interruption of capital movements is the consequence of the breakdown of the gold standard, which provided a common monetary machinery for the different economic systems and a normal means of liquidating international balances. The Committee is of opinion that hitherto no device, however ingenious, has been as effective in liquidating these balances as the gold standard. It has to be recognised that many conditions will have to be fulfilled before an international standard can again function with the same success as previously. But there can be no doubt that the disequilibrium between the different national economic systems, due, on the one hand, to monetary depreciations and, on the other hand, to the maintenance of arbitrary parities by means of exchange control, has contributed to preserving and reinforcing Customs barriers and quotas.

12. At the same time, the Committee considers that the world economic situation at the end of the great depression is very different from what it was at the beginning. The level of gold prices before the depression was the result of the abnormal evolution of the monetary systems during and after the war. The depression has had the consequence of bringing prices back to a level much closer to what may be regarded as normal. The problem of the parities to be established between the different currencies is therefore a much less difficult one than it was a few years ago.

The Committee is convinced that anything that conduces towards the restoration of equilibrium between the different economic systems, followed by the fixing of more stable relations between the currencies, will facilitate the solution of the problem with which it is dealing.

13. The foregoing analysis shows that the solution of the present difficulties in regard to the payment for raw materials is in large part bound up with the solution of wider economic problems which requires concerted action to restore freer circulation of capital, goods and labour. Any progress realised in this direction should help to meet certain countries' complaints in regard to payments for raw materials. It should be borne in mind, however, that such action can only be effective:

(*a*) If the countries which at present restrict foreign exchange transactions find means to modify their financial and economic policies so as to re-establish confidence and if they succeed in re-establishing the free negotiability of their currencies;

(*b*) If measures can be taken which will protect the countries which have imposed foreign-exchange control, and now desire to abolish this system, against the very dangers in which it had its origin, and which they have reason to fear might again arise if it were abolished;

(*c*) If the impediments to trade—such as high or preferential tariffs, quotas, clearings, etc.—can be diminished so as to give the debtor countries the possibility of meeting their obligations;

(*d*) And, lastly, if there is a movement towards an international standard which will facilitate the settlement of the balances arising from mutual exchanges between nations, a matter which to-day presents so many complications.[1]

14. If, as is stated above, concerted financial action is necessary to permit of a general re-establishment of free exchanges, the Committee feels that it is not within its province to make concrete suggestions on this fundamental monetary problem, which is closely linked with economic and political problems of great importance. It is content to express the hope that the next Assembly may be able to give a fresh impetus to the movements towards more liberal monetary conditions which started with the Tripartite Agreement of September 1936. It is convinced that, with the restoration of more normal monetary conditions, at least a part of the difficulties experienced by certain countries as regards payment for raw materials will automatically diminish.

At the same time, it is in its opinion important and urgent that all possible measures should be adopted to promote the flow of trade and credit without waiting for the more profound changes just mentioned.

In this connection, the Committee suggested that practical remedies might be sought, particularly in the following directions:

(*a*) The Committee would welcome every effort to abolish clearings, the serious effects of which on economic relations are universally recognised, by at least improving and increasing the elasticity of the methods at present in use. For this purpose, it would be necessary to study in detail the possibilities of financing commercial transactions concluded under the present systems, in order to remove difficulties due to the fact that these systems have to a great extent eliminated credit operations which were previously normal.

International credit operations have indeed gradually disappeared from current banking practice, more particularly because possible lenders fear that repayment may be prevented at the last moment by some exchange control authority. Once these fears are dissipated, credit will once more operate without difficulty through the ordinary channels. To facilitate this in the present exceptional circumstances —and if a general declaration on the part of the responsible authorities that they

[1] In formulating these proposals, the Committee does not intend to prescribe an order of priority for carrying out the various measures indicated.

will not interfere with such transactions is thought insufficient—credit operations might be afforded additional security. This might, if necessary, be provided by an undertaking, given by the competent authorities in some appropriate legal form, to exempt from all exchange restrictions the sum required to liquidate the credit. If it is to be really effective and achieve its purpose, such an undertaking should, more particularly, have the effect of making the documents relating to the operation negotiable on international markets.

Such a system would naturally not be confined to transactions in raw materials; but the latter would probably be the first to benefit by it.

The purpose of these suggestions is to facilitate the acquisition of raw materials through the operation of credit, and, in the same connection, it has been suggested that the existence of reserve stocks of such materials might also open up the possibility of credit transactions.[1]

Similarly, measures to minimise abnormal exchange risks in these transactions should receive special attention. Means should also be sought of liquidating the blocked accounts which bilateral agreements entail.

(*b*) Closer co-operation between the central banks might make it possible to meet certain difficulties against which countries are unable to take effective independent action. It has been pointed out, in particular, that the mutual granting of comparatively short-term credits by the central banks might enable a relaxation to be effected in the rigid clearing methods which still predominate, despite the progress which has been observed in the last few months, at any rate in certain countries. It would indeed appear that, in certain special cases, more particularly as between two countries whose trade with each other is governed by clearing agreements, the intervention of the central banks concerned, as and when they themselves may think fit, would render this system more elastic in practice.

(*c*) Lastly, there is the vital question whether means can be found of granting financial support under suitable conditions to countries subject to exchange control and wishing to abandon it, in such a way that these countries may be protected against the dangers of an initial deficit in their balance of accounts resulting from this abandonment.

Such support through international co-operation might take various forms. But whatever technical financial measures might be taken into consideration, such support could not be granted, and, in any case, could not achieve its purpose unless the countries concerned themselves took appropriate steps to restore confidence. An increase in their exports would in any case help to bring about internal conditions such as would enable them to abandon exchange control. The most effective way by which the creditor countries could help in the solution of the monetary problems of the debtor countries would be by announcing their willingness to receive larger quantities of goods from such countries and by relaxing the regulations at present governing the use of funds representing the proceeds of sales.

(*d*) The foregoing suggestions, like others of a very similar character put forward by various international bodies, would require to be given more specific form before their practical application could be considered. The Bank for International Settlements could probably do much, in a variety of ways, to support any efforts made in this direction.

15. It is essential, moreover, that action should be taken to lower trade barriers, not only in order to facilitate the acquisition of raw materials, but also to facilitate access to markets of manufactured products.

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[1] See Annex II.

In this connection, the Committee submits the following suggestions:

(*a*) A proposal has been made to re-examine and, if necessary, to re-adapt the International Convention of 1927 for the Abolition of Import and Export Restrictions and Prohibitions. This Convention did not apply to raw materials only, for which separate action was not proposed; it extended to the whole of international trade. Even in 1927, it was found unavoidable to accept the insertion of a " vital interests " exception in the Convention, which left it open to the parties to impose quota restrictions at their own discretion, and many of them promptly took advantage of this loophole when the economic depression supervened. It seems certain that, in present-day conditions, they would still insist on the " vital interests " exception, and thus any new convention would still remain without binding force. Moreover, some safeguard is justified against the competition of excessively-low-cost producers, whose unregulated exports would otherwise completely disorganise the market. The question therefore raises considerable difficulties in various countries, and these difficulties will probably prevent the acceptance of any extensive obligations in this sphere, but the Committee is in sympathy with any action designed to lessen hindrances to trade and considers that a special effort should be made to relax wherever possible the general system of quotas with a view to its abolition.

(*b*) Although tariffs are now a less formidable obstacle to trade than other restrictions and some progress has recently been made in their alleviation, the high tariffs imposed by certain importing countries still frequently constitute an impediment to the export opportunities upon which countries importing raw materials rely to supply the foreign exchange necessary to pay for these products, and the Committee would welcome further action, whether bilateral or multilateral, which would tend to reduce tariffs.

(*c*) A proposal has been made to the effect that the scope of application of the principle of " open door ", embodied in the Convention regarding the Congo Basin and in A and B mandates as regards trade, should be extended to territories found, after examination, to be similar in economic conditions to those to which such principle is already applied.[1] It has been pointed out that, in the absence of any assurance of effective reciprocity, the acceptance of any obligation in this sense would be prejudicial to the interests of territories under this obligation.

In fact, however, the existing practice of most colonial Powers in regard to the territories under their control conform to a large extent to the regime laid down in these instruments. The principal exception is the existence of preferential tariffs.

As regards preferential tariffs between metropolitan countries and their colonies and dependencies, the Committee has expressed the opinion in paragraph 9 above that there may be cases where the relaxation of preferences would be of assistance to countries importing raw materials, and it trusts that the Governments concerned will be prepared to consider such cases as part of a general effort to relax trade restrictions.

(*d*) Lastly, the Committee considered the question of communications and transit. It was informed that the Conventions of 1921 and 1923 in this connection had not yet been ratified by certain countries, sometimes for special reasons. It draws attention to the fact that freedom of communications and transit is indispensable, not only to ensure free access to raw materials, but also generally for greater freedom of trade.

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[1] See footnote, page 17.

CONCLUSIONS.

It will be seen that the two kinds of difficulties discussed in the preceding chapters of the report are of very different magnitude. No doubt certain difficulties in regard to supply exist; but none of them is insuperable. The Committee has proposed that certain points relating to these difficulties should be examined by the parties concerned and it desires to emphasise the necessity for this examination. The difficulties in regard to payments vastly transcend in importance those in regard to supply, and the Committee would be failing in its duty if it held out any hope of an easy solution of them.

There is no doubt that there is an inequality in the distribution of raw materials and that certain countries have particularly serious difficulties in supplying their requirements. The report mentions certain measures for alleviating these difficulties. But the only general and permanent solution of the problem of commercial access to raw materials is to be found in a restoration of international exchanges on the widest basis.

The formulation of such a solution, involving as it does political, financial and economic factors, is far beyond the competence of this Committee, but the Committee is anxious to secure that its deliberations should lead to practical results, and suggests that the report should be referred to the Financial and Economic Committees of the League with a view to their following up the various suggestions put forward in it, so that practical effect may be given to them as and when circumstances permit.

Some members have suggested that a conference of a limited number of countries (including the countries principally interested as producers or as colonial Powers on the one hand and the countries principally interested as consumers on the other hand) should be convened as soon as conditions appear favourable.

* * *

Declaration by M. Rosenblum.

M. Rosenblum, expert of the Union of Soviet Socialist Republics, regretted that the Committee had not, in his opinion, shown sufficiently clearly how the problem of raw materials was affected by present-day conditions, a task which might be of service to the cause of peace throughout the world.

With that aim in view, the Committee, in its technical task, should:

(*a*) Show clearly that the obstacles, especially of a financial nature, in the way of access to raw materials, of which certain industrial States complained, were due in the first place to their armaments policy, their ambitions and aggressive acts;

(*b*) Expressly stipulate that the plans for financial assistance referred to in the Committee's report should only be put into effect in the case of those countries if their policy could furnish adequate proof that the credits supplied would not be used for purposes detrimental to peace in any part of the world;

(*c*) Draw the attention of the Assembly to the fact that, in these times of political disturbance, raw materials were being used by certain States for aggressive and warlike purposes.

ANNEX I.

DEVELOPMENT OF WORLD PRODUCTION OF RAW MATERIALS.

Memorandum submitted by Ivar Högbom.

INTRODUCTORY NOTE.

At the meeting held at Geneva from June 16th to 25th by the Committee for the Study of the Problem of Raw Materials, I was invited to present a brief survey of the actual position in regard to production of and trade in raw materials, and also of the developments which have led to the present situation. In subsequent consultations of the Bureau of the Committee, it was agreed that my contribution was to be presented in the form of an annex to the Committee's final report.

As the time available was very short, it has not been possible for me to go beyond a few demonstrations of quantitative relations and general tendencies in the development of raw-material production. To begin with, I have tried, with the aid of a few graphs, to illustrate the relative importance of the different raw materials in production and trade, likewise the importance of foreign trade, particularly in primary products, for different countries.

But my main object has been to give a picture of the evolution of raw-material production in a longer perspective. The rapid economic progress of the last hundred years has been accompanied, both as a condition and a consequence, by a geographical expansion of raw-material production in the course of which new, and as a rule superior, resources have been made available. The industrialised countries have become more and more dependent on the supply of a great number of raw materials from sources spread all over the world. Further, technical progress has brought about large displacements, mainly involving a rise in the value of industrial as compared with agricultural resources, but also involving a revaluation of the relative importance of the different raw materials. These changes have been favourable for some regions and countries, unfavourable for others. Together with the great—but unequal—growth of populations—which has also run parallel to the industrial evolution—they have been one of the factors responsible for bringing about a relative poverty in natural resources in certain countries.

Even the scanty illustrations of the evolution of industrial raw-material production which it has been possible to give in these pages should suffice to show that this is a subject which will have to be worked out before international measures to meet future difficulties in regard to raw-material supplies can be designed.

Controversy centring round raw-material problems has always been most lively in times of economic disturbances, and particularly during recent years, and has assumed a widely different aspect at different stages of the depression. In many respects, it seems that the end of 1936 will be found to have marked a point of departure in the progress of economic events. I have therefore considered it justifiable to attempt an illustration of the character of this turning-point by examples from two important fields. Even if, after this turning-point, normal progress should not be restored, it is not without importance to form an opinion about normality on the basis of previous experience; disturbances can only be analysed as deviations from normal trends.

Stockholm, August 1937.

* * *

I. BASIC RAW MATERIALS.

Among the great number of raw materials needed for modern industries only a few are of fundamental importance. In any country, an industry on a big scale can only get started and be kept going provided that these raw materials are accessible at reasonable prices. Many other raw materials can be said to be indispensable to the big industries, such, for instance, as the ferro-alloy metals, but during normal conditions they play an unimportant role when taken one by one; even taken together they do not reach the same level of economic importance as some of the principal big products. It might be pointed out that some of these products, of less importance in themselves, are to be found in so few places that natural monopolies exist and that for this reason they ought to be given special consideration. However, these monopolies have not been used in such a way as to give rise to substantial economic difficulties in the countries of consumption, and in many cases the existence of potential natural resources or substitute materials restricts the possibilities of abuse. Reasonable prices should be charged for these materials more as a matter of international courtesy than as a matter of life or death to the industries of any country.

The following pages will deal mostly with certain questions concerning the basic raw materials; other raw materials will only be mentioned when there is a special reason for doing so. For the purposes of this article, to decide which raw materials should be considered as basic, it will be best to try to estimate for the different items the value of world production and trade, and to establish an order of preference on that basis.

Here we are faced with numerous difficulties, and it should be pointed out beforehand that, whatever starting-point is selected, only an approximate idea of orders of magnitude can be arrived at. There are certain criteria by which the importance of the questions can be judged, but, apart from these, we must be careful about making comparisons based on the value of the goods produced.

For several raw materials, and for most foodstuffs, it is not possible to give a representative average world price. This applies to heavy goods in particular, for which freight costs from producer to consumer are comparatively high in relation to the price of the product in question. The most important quotations refer for certain products to export prices (f.o.b.), for other products to import prices (c.i.f.). For our purpose, it has been regarded as most convenient in the calculations presented in Diagrams 1 and 2 to employ the export prices as far as possible.[1] In the short time available, it has not been possible either to elaborate weighted prices, or to use the figures for 1936, the first four diagrams being based on figures for 1935.

This means that, from the point of view of the importing countries, bulky or heavy goods, particularly coal, iron ore and timber, but also oil, vegetable fats and, in regard to foodstuffs, cereals, appear as somewhat under-valued in relation to some of the metals.

A comparison between the two diagrams (1 and 2) shows first of all that, in regard to world production, a much larger share still falls to food products than to industrial raw materials. As regards trade, however, a somewhat larger share falls to industrial raw materials than to foodstuffs. In this connection, it may be pointed out that industrial fats are used to a large extent for the manufacture of alimentary and fodder products, though they are here found in Diagram 2. Needless to say, all estimates of world values of the production of such materials as milk, dairy produce and meat are particularly unreliable.

In Diagram 2, the different raw materials have been divided into certain main groups; the predominance of power resources is thus brought out. Of the total amount of coal produced, only some 12% enters into international trade, coal being a determining factor for the location of industries, and consequently mainly consumed at or in the neighbourhood of the site of production. Of mineral oil, which has but little importance for the location of industries, a much larger part (about 45%) goes into international trade. This proportion would be still larger if the United States were not responsible for about 60% of both world production and world consumption. Within the power group, naturally any comparison between the value of fuels and water-power resources is of doubtful value.

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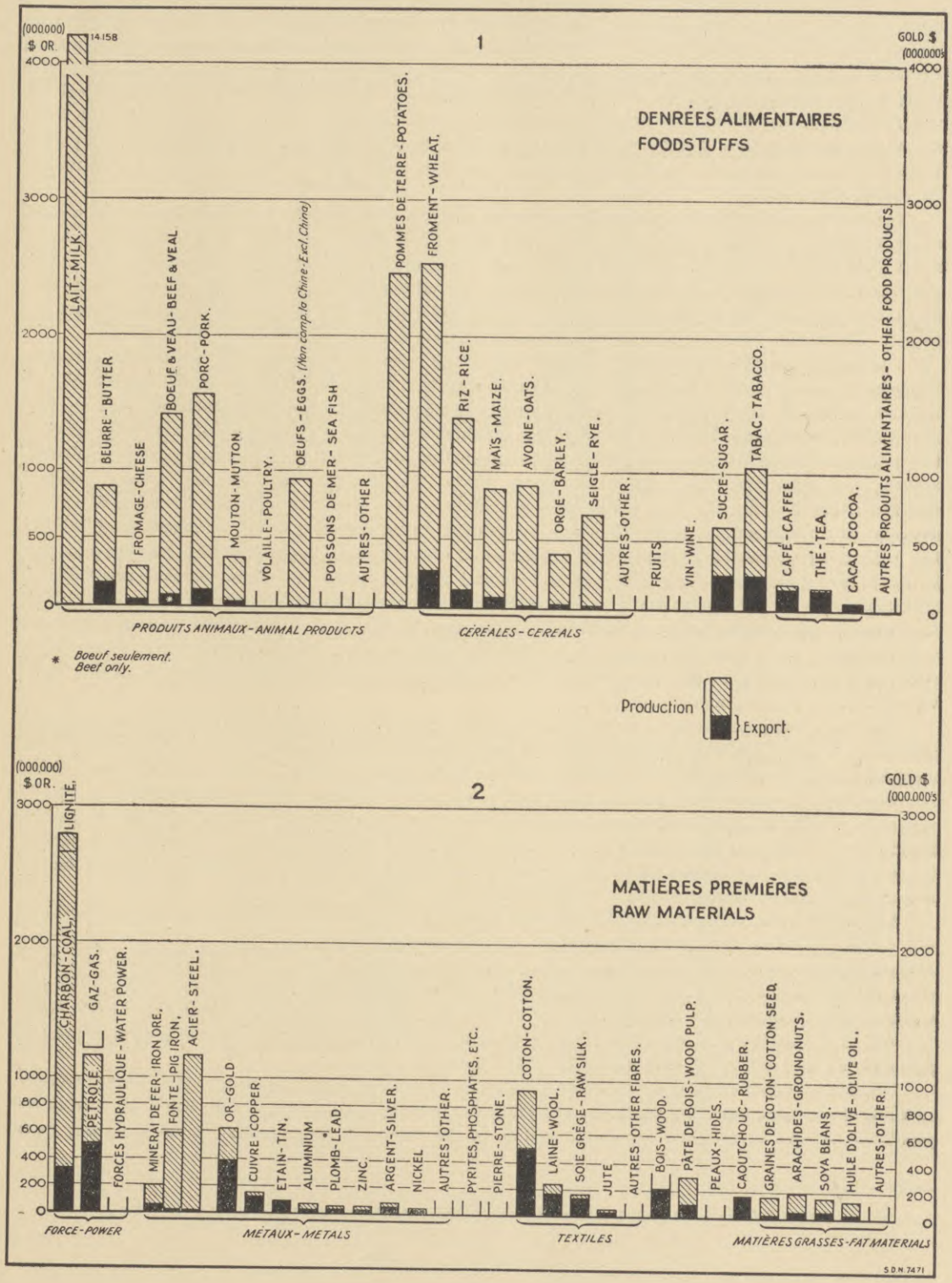
[1] For the list of prices used, and the export quantities and values, see pages 54 and 55.

Diagrams 1 and 2.

VALUE OF WORLD PRODUCTION AND EXPORTS OF CERTAIN PRINCIPAL FOODSTUFFS AND RAW MATERIALS, IN 1935.



In the metal group, columns have been drawn representing both iron ore and pig-iron and steel; for other items, only the metal content is shown. Within this group, a very considerable change in the relative values of production has been brought about by the rise in the value of gold in relation to other commodities; in 1929, the value of copper production was higher than that of gold production. It may be pointed out that the value of pig-iron includes the value, not only of the raw-material iron ore, but also of the raw-material coal (for coke); into steel, scrap further enters as a raw material; in the diagram, this item would probably reach about the same level as iron ore. For the production of the other metals, coal plays a comparatively small part as fuel and as a reducing agent, while electrical energy (based on coal, lignite or water power) is a main item in the cost of aluminium.

The fact has frequently been stressed that mineral products—*i.e.*, fossil fuels and metals—occupy a more central position as raw materials for industry than vegetable and animal products. The dominating position of the fossil fuels, coal and oil, is shown by the graph (Diagram 2). The aggregate value of all base metals except iron, on the other hand, is much less than the value of the textile raw materials and is even less than the value of the materials for the production of vegetable fats (cotton-seed, etc.) which will probably seem surprising. The value of trade in these metals, however, exceeds that in vegetable fats (oil-seeds, etc.).

The special attention paid to metals is easily understood. As raw materials, metals enter into industrial processes at an early stage, leading largely to capital goods. The industrial fats, on the other hand, are consumed after very short industrial processes, leading to alimentary or other consumable products; no very large amount of industrial labour in the importing countries depends upon the supply of these raw materials. The textile raw materials take an intermediate position; they go into industries employing great numbers of workers, but these industries produce consumers' goods. Furthermore, vegetable and animal products, classified either as foodstuffs or as industrial raw materials, may be said to represent the value of natural resources to a much smaller extent than mineral products, even including metals extracted from the ore. The price paid for vegetable products, such as cotton and wheat, includes larger wage costs than the price paid for most mineral products—for instance, tin and oil, coal being an exception. Thus, vegetable raw materials are often the product of a great deal of labour, while metals in particular are the products of comparatively little labour, but form the necessary material basis for capital industries. It might here be added that, as a rule, materials, the production trends of which show a rapid increase, include in their prices lower labour costs and higher profits for the entrepreneurs than materials, the production trends of which show a lower rate of increase (*cf.* Diagrams 5 and 6).

Diagram 3 illustrates the trade balances in 1935 of the European [1] and the most important non-European countries. It shows the value in gold dollars of total imports and exports as well as of the various items classified as: (*a*) live animals and articles of food and drink (groups I and II of the Brussels International Classification); (*b*) raw or partly manufactured materials (group III), and (*c*) manufactured articles (group IV), respectively. The countries have been arranged according to the number of inhabitants—(logarithmic scale at the top line). The total trade figures of the various countries of course indicate their actual importance to the rest of the world as consumers and producers and, consequently, the range of influence of such changes in their economic conditions and policy as affect their foreign trade.

Any necessary import, whether of foodstuffs, vegetable or mineral raw materials or finished products, requires as a corollary the means of payment. It is the necessity for imports that counts, not the kind of product imported, and, in critical circumstances, countries dependent on imports of foodstuffs will find themselves in a more precarious position than countries in need of industrial raw materials. Taking this into account, and considering the relative values of the different groups of materials entering into world trade, it would seem that the part played by metals other than iron in the problem of the distribution of primary products has been somewhat exaggerated by public opinion.

Diagram 4 gives some idea of the relative importance to the different countries of their foreign trade in all kinds of products, especially foodstuffs and industrial raw materials. It shows the value per head of the population of total imports and exports as well as of the various groups classified in the same way as in

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[1] On the diagram, Belgium means the Belgo-Luxemburg Customs Union and Poland the Polish-Danzig Customs Union.

Diagram 3.

FOREIGN TRADE OF CERTAIN COUNTRIES, IN 1935.

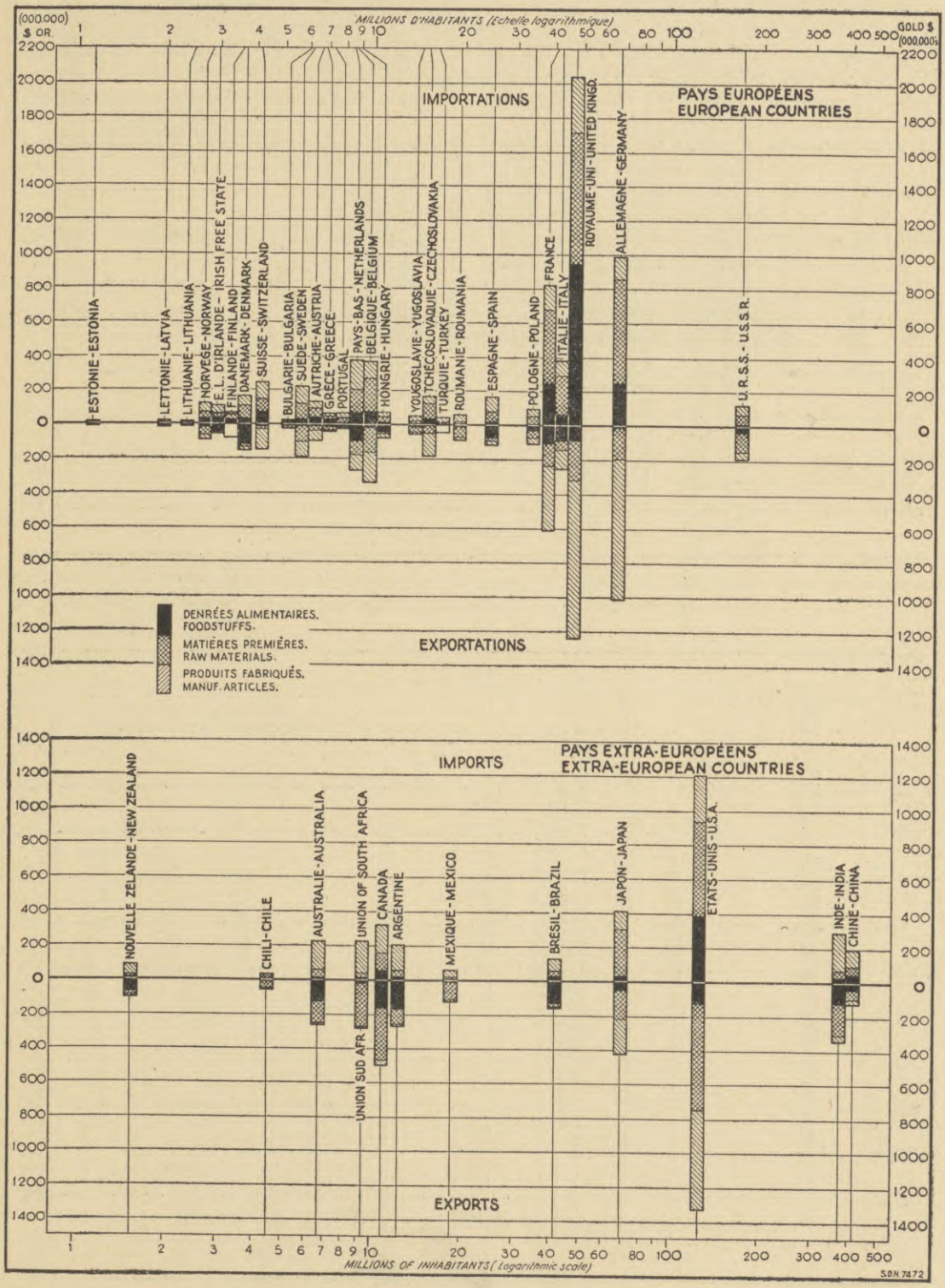

Diagram 4.

FOREIGN TRADE OF CERTAIN COUNTRIES PER HEAD OF POPULATION, IN 1935.

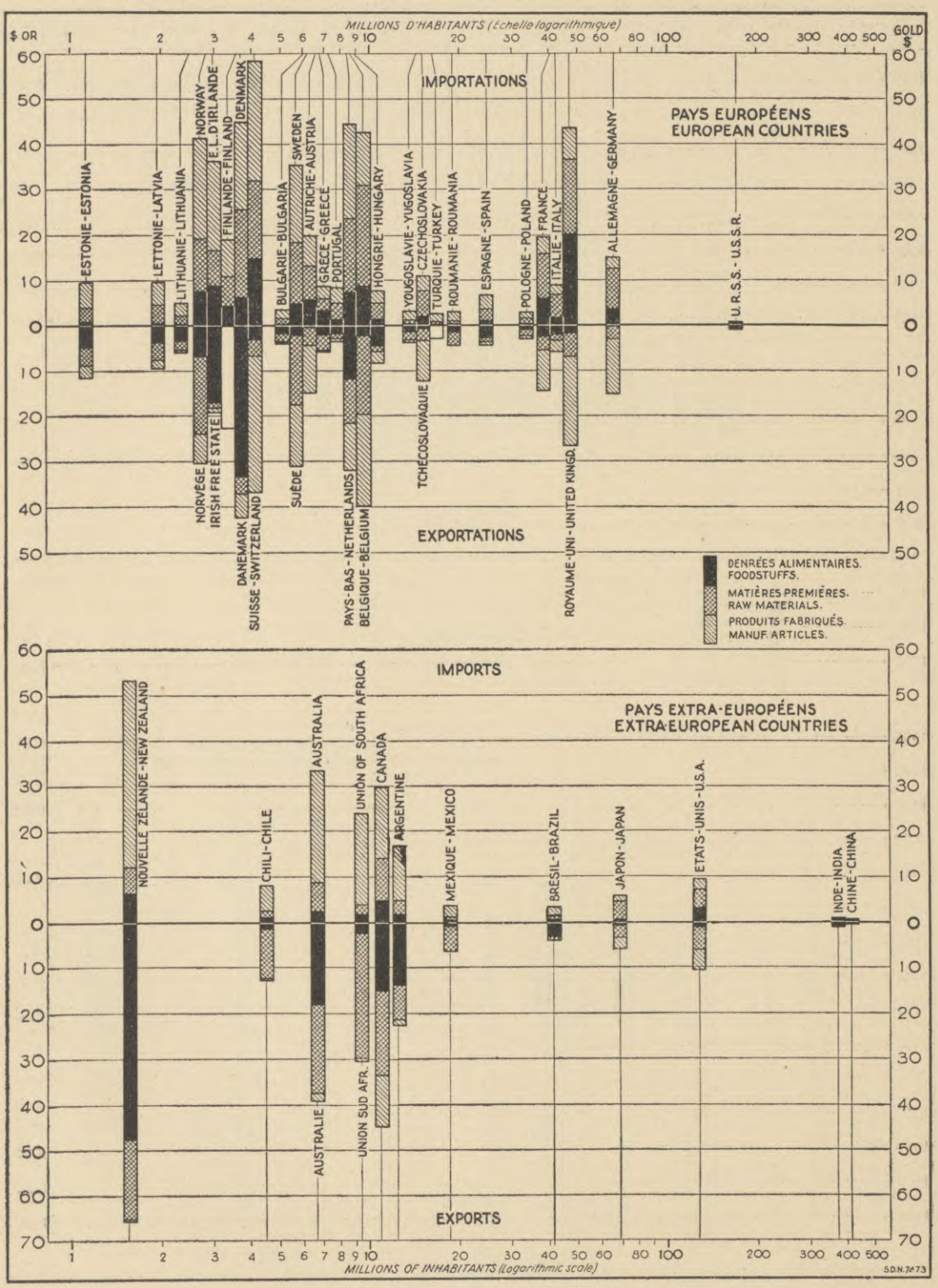

Diagram 3. As, even in this case, the countries have been arranged according to the number of inhabitants, the general decrease in the length of the columns from left to right on the graph illustrates how it is that, for obvious reasons, foreign trade generally plays a more important part in the economic life of the smaller than in that of the greater nations. This difference in the relative importance of foreign trade clearly explains why the desire for freer trade is more common in the smaller countries.

II. DEVELOPMENT OF RAW MATERIAL PRODUCTION: PERIODS OF PROGRESS AND PERIODS OF DISTURBANCES.

The development of production from the latter part of the nineteenth century up till now may for present purposes be divided into the following periods, marked by roman figures at the head of Diagrams 5, 6 and 7.

1. *Pre-war period of normal progress.* It is chiefly on experiences from this period that our conception of normal development is founded. The study of the laws governing the development of production must in the main be based on this period, which was not disturbed by worldwide external influences.

2. *The war and post-war period of disturbed development* may be regarded as comprising the years 1914-1922. This nine-year period marks approximately the interruption in normal development occasioned by the world war.

3. *Post-war period of progress.* The year 1922 may be regarded as a year of recovery after the crisis of 1921 and the figures for 1923 show that, for certain key products—in the first place iron and coal—the 1913 level was reached. Further, in most cases, 1923 begins a seven-year period of progress with only moderate fluctuations along lines indicating the same trend as before the war.

4. *Period of disturbed development during world depression (and recovery),* indicated as comprising the years 1930-1936. In most cases, it seems that recovery may be regarded as completed during the course of the latter year. A further increase in production should not be considered as part of the recovery.

This division is based only on the quantity figures for world production of a few of the leading industrial raw materials, but, on the whole, it coincides with the development phases marked by other series of economic data. Here the main object is to distinguish those periods during which extraordinary disturbances have upset the proportions between different branches of production, from those during which a normal course of progress indicates that a balance has been reached corresponding to the stage of development.

By this division into periods, we have also made it clear that the post-war figures should not be directly connected with the pre-war figures, although they have been so regarded in some attempts to establish general trends of production by mathematical statistics. According to that view, the World War would represent an inevitable phase of evolution, which would seem to be carrying fatalism too far.

The indications relating to the fourth period show that the last world depression should not be considered as commensurate with earlier recurrent economic crises. In its consequences, it may rather be compared to the disturbances occasioned by the world war.

For several reasons, a statistical study of the general laws of production ought to be based on world figures rather than on figures showing the development in individual countries or regions. In the first place, the widest possible statistical basis is thus obtained, the influence of local and accidental factors being reduced as far as possible. Further, the debit and credit of world trade even out, and the problem of production consequently presents itself in its clearest form. Finally, the gauge, against which developments in individual countries have to be measured, is world production.

In the earlier stages of industrialism—for some products even in the later stages—a single producing district, and sometimes a single enterprise, played an important part even for the total world production. The producing units were few, and the discovery and opening-up, for instance, of a new copper deposit, or of an oil-field, might cause a marked rise in the corresponding world production curve—not to mention the discovery of a new gold-field. Even technical inventions facilitating production or stimulating consumption sometimes, though in surprisingly few cases, left traces on the total production curve. But the farther development proceeded the greater became the number of producing units and the wider the distribution of consumption

in different consuming regions and for different technical purposes. In this manner, local and accidental events affecting production, or the appearance of an invention affecting demand in one of the many branches of consumption, later on lost their importance from the point of view of the total figures, the temporary fluctuations of which appear more and more as a function of general economic conditions. For every decade, averages became steadier and trends clearer—until the World War.

After the deep disturbance of economic processes suffered during and after the World War, pre-war conditions have assumed an appearance of normality. Among other things, the growth of production, which had proceeded for decade after decade, may be taken as a criterion of normal material progress, to be regarded as natural so long as production has not become directed towards objects foreign to progress, and so long as the economic organisation does not collapse for external reasons. Booms and crises of the pre-war period appear in the production curves as only slight adjustments, due to some discrepancy among the economic factors, along development lines which on a long view show a constantly rising trend [1]. Events after 1914 will be seen in their right perspective only when viewed as setbacks to or interruptions of the earlier progress. The dimensions of the depression which began in 1929 may best be judged by a comparison with the pre-war crises; such a comparison will explain the reasons why this depression should be singled out as an exceptional period in the history of the progress of production.

Trends of Mineral Production.

As far as mineral raw materials [2] are concerned, the most remarkable feature of pre-war production was the persistence of an even rate of growth, practically unbroken during the whole of the period in question. The rate of increase varied, however, for different classes of materials. Thus, to mention a few instances, world production of coal rose on an average by 4.2% a year over the twenty-year period 1870-1890, as well as over the twenty-year period 1890-1910 (with only a slight reduction in the rate of increase at the end of the period; *cf.* below). For copper, the average yearly increase of production in the period 1880-1913 was 5.9%; for oil, 8.4%. Thus, the production of these raw materials rose in the same way as capital grows by compound interest, though the rate of interest varied for the different articles.

A more striking form than the average yearly percentage of increase of expressing a growth of this kind—*i.e.*, a geometrical progression—is by the statement that, on an average, production has been doubled in so many years. The average yearly increase of 4.2% in coal production corresponds to a doubling in a little less than seventeen years; the rise of 8.4% in oil production corresponds to a doubling in just above eight and a-half years. While coal production was doubled, oil production increased nearly fourfold. Consequently, during this normal stage of development, the importance of oil in relation to coal rose by 100% in the course of seventeen years [3].

Our conception of normal development is closely bound up with the idea of a stable rate of increase in production [4]. A few words on the mathematical consequences of a development of this kind may therefore be required.

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[1] The crises of the pre-war period did not show any tendency to increase their amplitude as has sometimes been postulated in connection with theories of economic catastrophe.

[2] On page 41 the factors are discussed which prevent an equally regular growth of vegetable production.

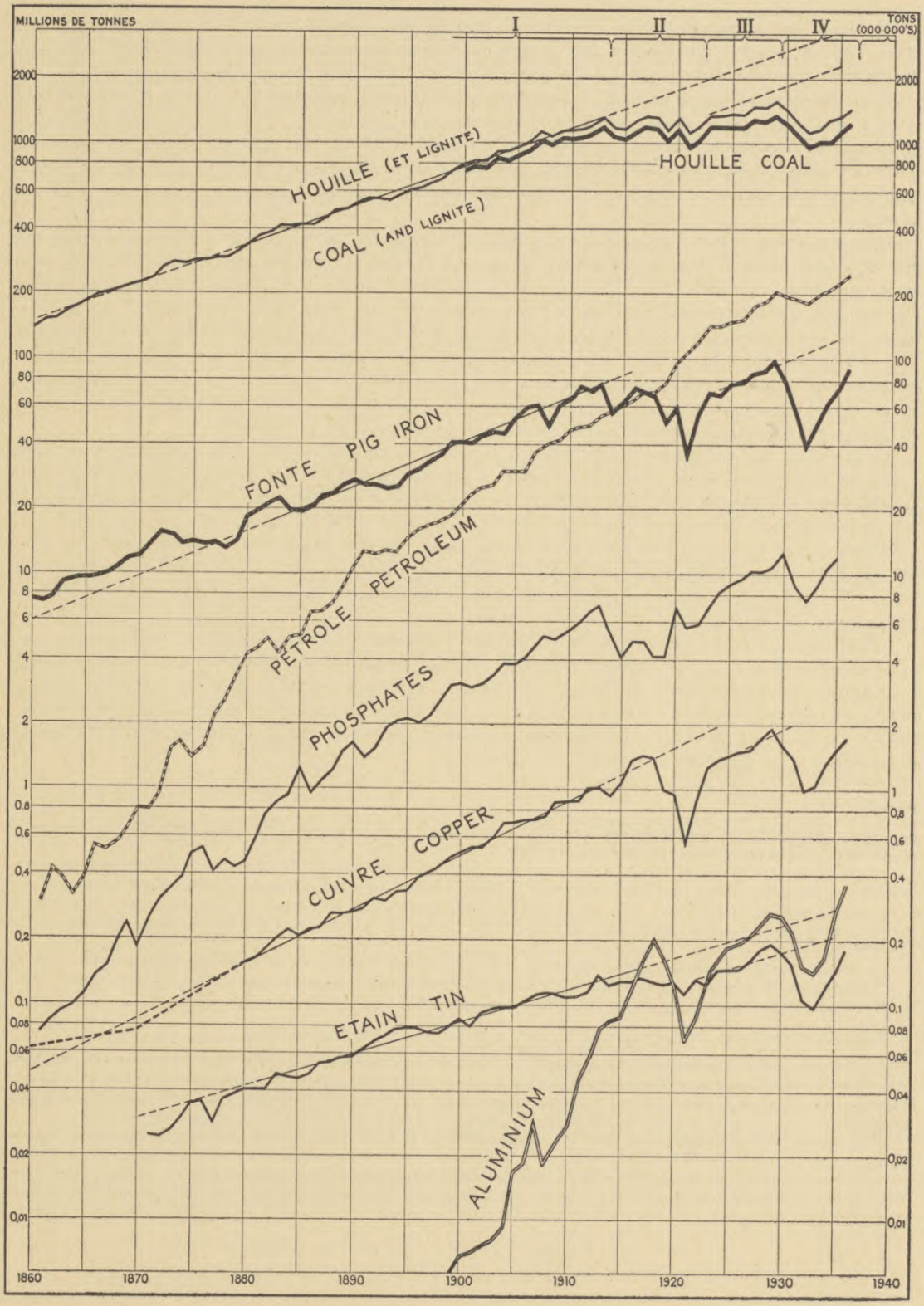
[3] From a theoretical point of view, this reasoning implies a slight simplification, the nature of which will appear from the comparison between the development of oil and coal production, to be found below.

[4] Objections might possibly be raised to considering a stable rate of increase as a probable characteristic of normal progress also in the future. We do not in this connection refer to general vague statements that an extrapolation of lines of development some tens of years ahead lead to absurdity; such statements have been made repeatedly for nearly a century. But it may be contended that the very basis of continued progress no longer exists; for instance, that such progress was only possible during the period of relative freedom of trade that prevailed before the war.

The following argument may serve perhaps to meet these objections: Suppose that the obstacles in the way of world trade set up during the depression continue in the future, will that prevent a normal increase in international trade ? It may be so, if the possibilities of *increasing* trade in the fields remaining open for activity are smaller than they were in the branches that were cut off; if that is not proved to be the case, there is no reason why a lower rate of increase should be expected in that part than in total trade. Ground has been lost, but it is a non-recurrent loss, after which activities (set out as on Diagram 5) are likely to follow a lower parallel to the previous trend—a loss that may most conveniently

Diagram 5.

World Production of Principal Minerals and Metals, 1860-1937.
(Logarithmic scale.)



A stable rate of growth implies, theoretically, that the total previous production equals the production of the following period of doubling,[1] so long as there has been no extraordinary period of delayed development. With a fair degree of accuracy, it may be said that, until the World War, the amount of coal produced in the world in seventeen years, the amount of copper produced in twelve years and the amount of oil [2] produced in eight to nine years normally equalled the whole earlier world production. It should be noted that such a fabulous increase of production is a corollary to our conception of normal development. We do not commonly speak of a normal development of production if it has been influenced by changed conditions for expansion, but if all conditions determining the expansion remain unchanged, we get *eo ipso* a stable rate of increase.

The stable rate trend of increase begins only when production has reached a certain volume. In the case of a new product, there must always be an initial period of some duration, when production from zero approaches the stable line. Therefore, it is not possible to fix a particular time when the general development, which in our diagram may be traced to the outbreak of the Great War, can be said to have begun; for one article after another, the production figures more and more distinctly reflect the characteristic lines of development. The increase in the production of coal has shown a stable rate at least from 1860; the production of oil reached a stage where the trend was unmistakable about 1880; the production of phosphates about 1885.[3] It is doubtful whether the production of aluminium can be considered to have reached stability, and obviously the production of pulp for rayon is still at an initial stage.

It is evident that an increase in production of this type can continue only so long as supplies do not give out or the markets do not get saturated. However, an examination shows that no great changes—other than external—can be expected in the near future in the conditions for the geographical and vertical expansion of the production and consumption of the industrial raw materials. On the other hand, the consumption of foodstuffs cannot be expected to increase on similar lines. On the presumption that humanity were fully nourished, an increase in the total consumption of food-units could only proceed at the same low rate as the increase in population, although variations in the selective importance of the different foodstuffs or the different producing regions might occur.

World production of a certain material is the sum of production in different countries. World consumption of a material is the sum of consumption for different purposes. These are two examples of how world production (or consumption) figures with a tendency to increase at a stable rate can be resolved into their components. It is of importance to consider the type of resultant development if the component developments are characterised by a stable rate of increase, and to consider the possible types of component developments if the resultant development is characterised by a stable rate of increase.

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be counted as a delay in the normal development of so and so many years. The same reasoning would hold good if a group of countries were to cut themselves off from exchange with the rest of the world.

Indices of world production and world trade (quantum) show that production has reached the 1929 level, but that trade has not. Trade has suffered a greater setback from the obstacles set up than production. There is no reason why both production and trade (trade on a lower level) should not advance as previously. If the obstacles are removed, there will be a one-time gain for trade which may reach its relative position to production (although it will take some years' time—at least for sea-borne trade where there is not the tonnage available for such an increase).

It is, as a matter of fact, difficult to imagine any change which would not in principle mean a one-time loss or a one-time gain in progress, although the effects might be extended over a period of some duration. An analysis of the consequences of a permanent change in the ratio of saving would, however, probably reveal that such cases exist—theoretically.

[1] This statement follows from the equation: $\ldots + \frac{1}{16} + \frac{1}{8} + \frac{1}{4} + \frac{1}{2} + 1 + 2 + 4 = 8.$

As a graph representing the development of production with approximate accuracy follows the stable rate trend only from a certain point on the time axis, the production in one period of doubling (before the war) generally exceeded the total amount of previous production in the case of a new article (petroleum), but fell short of the previous production in the case of an article (like copper) produced in considerable quantities before modern times. In both cases, however, the earlier production is of an order of magnitude that can in practice be neglected.

[2] In the case of oil, the production of which was not retarded by the war, this statement holds good until the beginning of the world depression, 1930.

[3] It should be noted that even the production of phosphates, although produced for agricultural consumption, follows a similar stable rate trend as a mineral product for industrial consumption. Phosphates production, besides, shows interesting regularly recurrent setbacks at intervals of four to five years.

Assuming, for instance, that the total quantity of food production increases at a low stable rate (2%), and that the total quantity of industrial production grows at a higher rate (4%)—these assumptions are fairly near the mark—what type of curve will suit the development of total primary production—alimentary and industrial ? It will easily be seen that the resultant curve extended backwards approaches the component curve with the lower rate of increase (foodstuffs), and extended forwards approaches the component curve with the higher rate of increase (industrial raw materials). This would mean that the total quantity of production which actually has a tendency to increase at about 3% a year, is on its way from a 2% increase (corresponding to agricultural production) to an increase of about 4% (corresponding to industrial production).

The stable rate of growth of world production of the important raw materials is ensured by the production of an increasing number of producing units, and in most cases an increasing number of countries contribute to the total production. Some general conclusions as to the type of development curve represented by the production of single countries (or single units) may be drawn from this statement.

First of all, it is evident that a stable rate of increase in world production is not compatible with a stable rate of increase of production in individual countries if new countries appear as producers. In that case, the countries which have previously been the sole producers must show a lower rate of increase, or even a decrease of production. Now, one of the most characteristic features of the normal pre-war period was the continuous geographical expansion of production, and particularly of raw-material production. It follows, then, that normally the production of a single article in a single country developed according to a curve showing a decreasing rate of growth although world production was increasing at a stable rate. The original producers, of course, always lose in relative position, but what chiefly matters is the causal connection that exists between the tendency to a stable rate of increase in world production, the geographical migration of production, and the falling rate of increase in the production of the individual countries, which is especially marked in those countries which were the original sites of production. It should be added that these phenomena in themselves do not necessarily indicate a general decline in the rate of a country's total production; enterprises in new fields may compensate for what is lost in older-established industries. But, as far as the principal raw materials are concerned, it may be said that inevitably the old countries fall behind " normal " development.

It is a remarkable fact that the radical changes in the nature of consumption during the latter half of the nineteenth century and the first decades of the twentieth did not on the whole disturb the even course of the development curves; the change-over in the main consumption of oil from burning in paraffin lamps to employment in petrol engines had no noticeable effect on the rate of growth of consumption; railway building has ceased, while the rate of growth of pig-iron production has remained what it was; the most important field for the use of copper has shifted likewise without disturbance of production growth, from low-tension to high-tension technique, from the telegraph and telephone to electric motors and power-transmission lines. The reasons why these great revolutions had so little effect on the growth processes illustrated in the diagram cannot be discussed here, but the fact that the disturbances were so slight makes it probable that technical changes will not belie the conclusions in regard to the relative importance of various raw materials in the near future which may be drawn from past developments.

There are, however, a few remarkable deviations from the stable rate trend because of changes in technique and of the more rapid increase in the production of competing materials. The most important of these deviations concern the later phases of coal production. On account of the special importance of coal, it will be necessary to analyse this development in another connection.

Trends of Vegetable Raw-material Production.

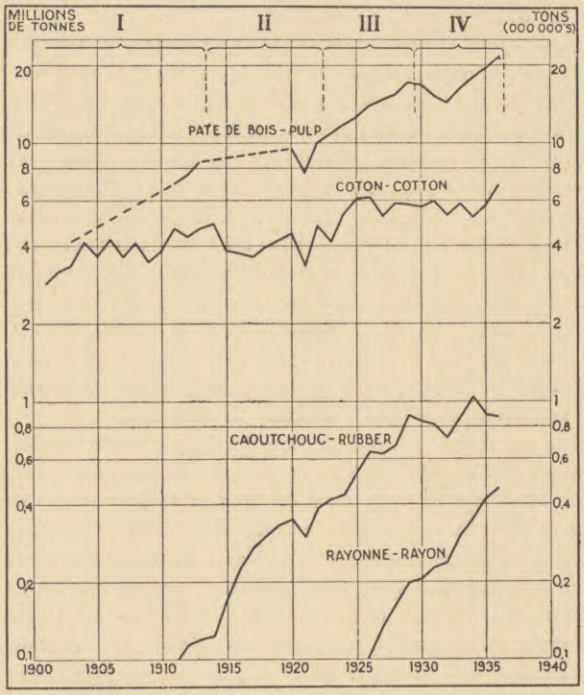
The trends of the production of vegetable raw materials are less clear than the trends of mineral production. To a certain extent, this may be because mineral raw materials have the character of capital goods, while vegetable products represent consumable goods. What is more important, however, is that mineral production is not influenced by external factors such as climate and, further, that production can be regulated independently of the time which has to elapse between sowing and reaping. This last factor acquires particular weight in the production of certain tropical products—*e.g.*, rubber, since about eight years have to pass between planting and the initial yield. In such a case, the anticipations of the planters during periods of prosperity and periods of depression, concerning future demand, will have serious repercussions on the volume of production.

Besides, the study of the normal pre-war development regarding vegetable and animal products is difficult, because, during earlier periods, statistics were very unreliable, and on account of the conditions under which these goods are produced, in many cases cannot yet be regarded as satisfactory.

Diagram 6 has been drawn to give an idea of the development of the production of some of the most important vegetable raw materials. In this case, however, reliable figures do not reach farther back than 1901.

Diagram 6.

World Production of Certain Raw materials of Vegetable Origin, 1900-1936.
(Logarithmic scale.) *



* *Note:* The 1936 estimate for wood-pulp in the diagram is uncertain, as data for many important producing countries are not yet available.

The diagram shows that, in regard to the most important vegetable raw material—viz., cotton—the increase in production has been considerably slower than in regard to mineral raw materials. This is to be explained mainly by the different potentialities connected with the development of demand, as it affects articles of clothing or articles for capital-goods industries.

Timber has not been included in the diagram, because no statistical data are available for world production, but a few general remarks may be made. Contrary to what has happened with nearly all other industrial raw materials, the consumption per head of sawn wood in the advanced industrial countries has been decreasing since the beginning of this century. To a constantly growing extent, other constructional materials have been ousting timber in the market.[1] However, the forest-owning countries have been fully compensated by the steadily increasing demand for pulp. In this case, sufficiently reliable statistical data for world production are available for a few years before the war and from after the war. It will be seen from the graph that there has been an unusually rapid and stable increase in pulp production during the last period of economic progress.

A special case from the field of the pulp industries is illustrated in the diagram by the development of rayon production. Rayon is the only big product which has shown a strong unbroken growth of production during the period of depression. Rayon, and in consequence pulp as a textile raw material, is still in a typical initial stage, before production begins to show a regular trend.

Disturbances in the Trends during and after the World War.

Production during the war was naturally characterised by the fact that certain materials were particularly in demand at that time—this applies especially to copper and petroleum among important raw materials. In both cases, production increased at about the same rate during the war as it did before the war, while, on the other hand, the production of other materials decreased. This also applies to the production of pig-iron. The increasing demand for iron and steel for military and naval purposes could not offset the lessened provision

[1] Although the relative importance of wood which has undergone no other manufacturing process than sawnig is steadily diminishing, the relative importance of manufactured wood products in various forms (*e.g.*, plywood) is increasing.

for general consumption requirements.[1] From a military point of view, iron and steel are capital goods, mainly needed for armaments investments for war or defence; oil, and to some extent copper, are consumable goods in time of war.

At the end of the war, the copper market and the iron market were depressed by stocks held by the war industry, especially in countries outside the war-zone and to a certain extent also by the appearance of demobilisation scrap. This accentuated the decline shown by production, particularly as regards capital goods, during the 1921 crisis. On the other hand, all the oil extracted had been gradually consumed during the war and, for numerous reasons—the chief one being the boom in the automobile industry—new peak years followed for oil consumption, and the production of oil rose even during 1921, when other production reached bottom level.

During 1922 there was a distinct recovery, but a normal production of different raw materials, corresponding to the times, can better be considered to have been restored from 1923 onwards. This is where a new period of development begins, the one which, as far as the yearly figures of production go, ends with the year 1929. The starting-point in 1923 was, however, very different from that of 1913. Coal production was at the 1913 level with pig-iron production 10% below, while the production of the more modern raw materials, copper and pulp, showed a 25% increase as compared with 1913; mineral oil showed an increase of as much as 170%. Actually, after a nine-year period of disturbance, mineral oil production in 1923 was at a level that would have seemed normal had general progress not been impaired by the war and the depression.

During the period 1923-1929, the average rate of increase in the production of different raw materials largely corresponded with the rate of increase of the pre-war period, and the fluctuations year by year were rather smaller than greater than the normal. The rate of growth in production, which varied for the different raw materials, led to a further change in their mutual importance. All the above-mentioned raw materials showed higher production figures in 1929 than in 1913, but coal showed an increase of 10%, pig-iron 25%, copper 90%, paper pulp 102% and mineral oil 279%.

The figures given here indicate substantial changes in the relative importance of the different industrial raw materials. The production of all the industrial raw materials put together has in its turn grown much more quickly than the production of foodstuffs. These changes in the structure of the total primary raw-material basis produce very distinct changes in the relative wealth of the various countries. Time has brought a further technical development and a wider geographic expansion of industrialism, not only during periods of general progress, but also during periods of war and depression.

The displacements have continued even during the period of the last world depression and recovery (Period IV on the graphs). Obviously, one cannot have any definite view as regards the last year of this period, but it seems plausible that the figures of production for 1936 will not prove entirely representative of the new balance between different raw materials, but that the figures for 1937 might possibly do so. If such should be the case, the years 1936 and 1937 should be comparable with 1922 and 1923 in the recovery from the preceding period of disturbances. The last depression would then prove to mean a delay in the course of normal development of seven years as compared with the delay of nine years directly caused by the World War (leaving aside the question how far the last depression also should be considered a legacy of the war).

It is not without importance to state that only during about seven years (1923-1929) of the twenty-four years that have passed since the beginning of the war has world production shown a fairly normal progress and also normal proportions between the different kinds of products. The statistical situation in 1937, however, indicates that possibilities are present for a resumption of a normal progress. We shall revert to some aspects of the change in the situation from 1936 to 1937 in a later chapter.

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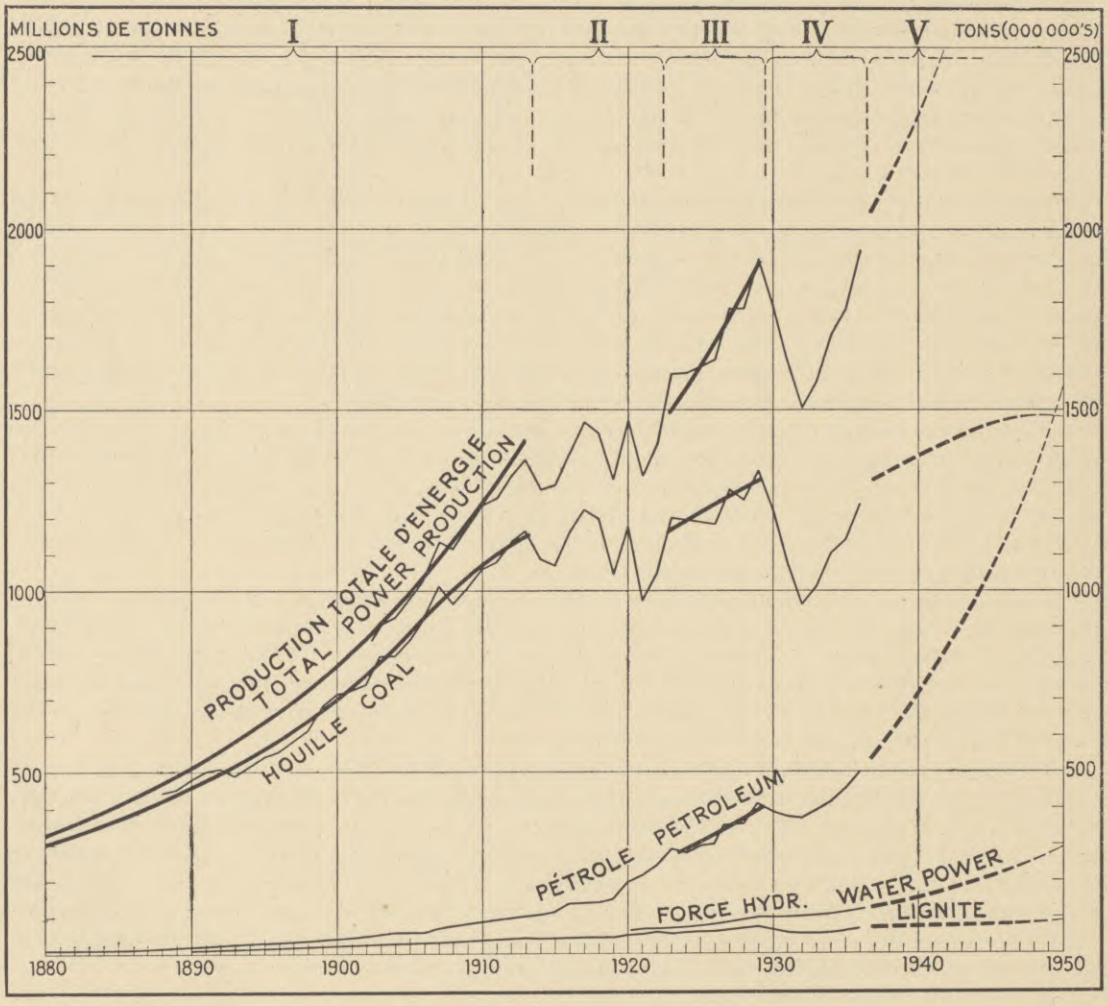
[1] Generally speaking, an exaggerated idea prevails of the importance of the direct arms industry for the consumption of iron and steel and hence for the production of ore. The amount of iron (more than 600,000 tons) contained lately in a month's shipment of Swedish ore would suffice for about 5 battleships, 10 cruisers, 20 destroyers, 20,000 field guns, 10,000 tanks, and 10 million rifles, all of which together would, constitute a considerable item in any armaments programme. However, the manufacture of arms, owing to the demand for high-quality products, gives a very considerable amount of employment to industry and has thereby influenced the general economic development and consequently the consumption of iron for other purposes than those of the armaments industry—but that is another matter. It should furthermore be noticed that an unknown and probably very large amount of steel is needed for military constructions such as fortifications, strategical roads and bridges, aerodromes, etc.

Diagram 7.

Trends of Power Production (in Terms of Coal).



The Special Case of Coal.

Apart from the secular shift from agriculture to industry, the change in the position which overshadows all else has been brought about by coal having lost so much in importance compared with other industrial raw materials. Actually coal, as a source of wealth for the various countries, has been reduced to a greater extent than can be gathered from the quantity figures of production. The interest yielded by the coal-mines and the miners' wages have been reduced to a minimum, and the worst unemployment problem of Europe is due to coal-mining having become stationary and in many cases even declined where technique and rationalisation have progressed, thereby reducing the number of workers required per quantity mined. Furthermore, and this is really more important than the problem of the coal-mines as such, coal has lost most of its value as a localising factor for industry; new industries as a matter of fact now avoid the coal districts.

Diagram 7 has been compiled in order to show how the increase in the production of coal has slackened under the influence of competition from the more modern power resources, oil and water power [1].

Up to the World War, the increase in the total power production seemed to have followed a practically stable rate trend-line with a yearly increase of 4.5%. During the post-war prosperity period, a 4% trend corresponds more closely to the development, and the same rate of increase has been applied to show how a normal trend from 1937 would appear.[2] Assuming that the production of oil and hydro-electric power regains the previous rates of increase, coal production will have to be timed accordingly. The falling rate of increase, already perceptible before the war, will be further accentuated. A loss, in the relative position of coal as a source of energy, similar to that which followed upon the disturbances of the war, has followed upon the last period of depression. Even if the validity of some of these assumptions be questioned, the graph will probably make it clear how regularly and rapidly the situation in this field is changing, and it should be remembered that these changes apply to two of the most important industrial raw materials.

The big industries of Europe and America have been founded in a rather one-sided way in the coal-mining districts. During the era of steam, this localisation was natural. It is no longer so during the era of oil and electricity, and the post-war period has been characterised by a spread of industry to other sites, as also happened during the war.

The diminished attraction of coal for industry has been felt in three different spheres: in the old industrial countries, most noticeably in England, where the mining districts have become distressed areas, which new industrial enterprises avoid; in Europe as a whole, where recent industrial development has been most conspicuous in countries where industrialisation was originally slow owing to the lack of coal resources; finally, in the world as a whole, through the industrial development in the peripheral countries, which have to a great extent invaded the distant markets of what were formerly the leading industrial countries.

III. GEOGRAPHICAL DISPLACEMENTS OF PRODUCTION.

The regular increase in world production of industrial raw materials—only interrupted during periods of extraordinary disturbances—would obviously not have been possible if new resources had not become available for subsequent exploitation. There exists, therefore, a causal connection between economic progress and the geographical expansion of raw-material production. It may be of some interest to endeavour to form an idea of the present phase of that expansion.

In inventories of mineral resources, a distinction is commonly drawn between actual and potential resources. This means that deposits, or parts of deposits, which have been discovered, and are moreover economically workable at the present stage of technique, are counted as actual resources. By potential resources are meant those which can be made available only under certain altered conditions—*e.g.*, improved communications, metallurgical progress, etc. As the matter of transport costs is of such decisive importance, it would be as much to the point to speak of actual and potential regions of production, in the sense that deposits, technically considered as workable, will be exploited if situated within the actual region, but not if situated within the potential region.[3]

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[1] One ton of oil has on the graph been considered equivalent to two tons of coal. This more than makes up for the difference in calorific value between oil and coal. However, oil is technically a more valuable source of energy than coal, and, furthermore, no consideration has been taken of gas in the construction of the graph. One ton of lignite has been regarded as equivalent to a third of a ton of coal. Finally, the total output of hydro-electric power in 1929 has been considered equivalent to 100 million tons of coal. The choosing of equivalents in these latter cases is of little importance for present purposes. It should be noted that wood as a fuel has not been taken into account in the construction of the total power curve.

[2] The lower rate of increase in the trend of total power production after the war in comparison with the pre-war trend can be interpreted as compensating for an increase in the previous rate of rationalisation and perfection of technique, whereby less coal needs to be used for the production of the energy required than would otherwise have been the case.

[3] Concerning the vegetable raw materials, it should be stated that it is mainly the climatic factor that determines the potential regions; the availability of labour, in the first place, and the geographical position in relation to markets, in the second place, determine the actual regions of production. Furthermore, the potential regions for tropical production are large, compared to the regions hitherto developed. This holds good also for the production of most vegetable industrial materials from other climatic zones, but not, for instance, for the extensive production of wheat.

Concurrently with the increase in world production, the boundaries between these regions are constantly being displaced: the actual areas into which production migrates are extended and the remaining potential areas are gradually reduced. As far as the heavy mineral products are concerned, this displacement is a very slow process; it does not pay to exploit unfavourably situated resources, so long as production can be deliberately increased nearer to the centres of consumption.

The map (Diagram 8) may serve to give a general idea of those parts of the world which may at present be considered as economically accessible to big-scale exploitation or exploitation for export of the potential resources of some of the main mineral products (supposing the open door applied everywhere) [1]. It should be noted that the zones have been drawn without considering whether deposits exist or not.

Diagram 8.

PARTS OF THE EARTH'S SURFACE ACCESSIBLE FOR EXPLOITATION OF POSSIBLE MINERAL RESOURCES.

Coal, iron ore, and phosphate deposits are exploitable if situated within the *black* areas.
Oil-fields are exploitable if situated within the black and the *dark-hatched* areas.
Copper deposits are exploitable if situated within the black, the dark-hatched, and the *light-hatched* areas.

The map is based on the following general argument. The raw materials for heavy industries—viz., coal and iron ore—can, if mining for local purposes is left out of account, be economically produced only in Europe, North America and within a zone of, say, about 100 km. (about 60 miles) from the coast in other parts of

[1] The map is drawn to a true area scale and thus gives a correct impression of the size of the regions indicated.

the world [1]. On account of the growing industrialisation of the Far East, we should furthermore add the most densely populated regions of Asia; some other factors have also been taken into account in selecting the areas and coast-line strips to be indicated on the map as forming the part of the land surface where production of coal and iron ore might be possible. Within this zone also, phosphates may be considered as exploitable. The second zone, where oil production is actually possible from the point of view of accessibility to the market, is indicated on the map by dark hatching. In this case, it has been assumed that production is at present economically possible in Europe, the greater part of North America, in some other economically developed or favourably situated regions, and, furthermore, within a distance of 250 km. (about 150 miles) from all sea-coasts, except those of the polar seas. No large-scale exploitation has yet begun on any of the rich oil-fields which have been discovered and investigated outside the shaded area. Obviously, there can be no question of shortage in the near future so long as the oil output continues to increase, even if production is confined to regions which are easily accessible. The last zone on the map indicates places where copper-mining, but not oil production, might still be feasible. The line between this zone and the remaining parts of the continents, which have been left blank, has been drawn mainly with an eye to the possibility of recruiting and keeping labour for the mines. Finally, the Union of Soviet Socialist Republics, where production is a question of central planning, has been specially treated on the map. On the map, only three zones have been indicated, but these will allow conclusions also concerning the economic possibilities for exploitation of minerals other than those indicated. Thus production of manganese and chromium ores—to mention one example—is possible farther away from the coasts than production of iron ore, the first-mentioned ores having a considerably higher value. Zinc and lead ores should probably be possible to exploit still farther away, although in this case very great resources are available even within the regions indicated by black on the map. The only base metal besides copper that can be economically produced over the greater part of the world is tin. As a matter of fact, a closer study of the geographical distribution of mineral production shows an almost perfect correlation between the prices paid for the products and the actual size of the zones of production as defined above.

IV. PRICE CHANGES, 1936-1937.

The stage in the recovery in the volume of production reached towards the end of 1936 coincided with a sharp rise in prices. The causal connection between the two developments will be illustrated below by examples from two different fields, both of importance in regard to raw materials.

The connection between the level of employment and prices is perhaps most clearly to be seen in the sphere of maritime freights (Diagram 9). Apart from the illustration of the main reason for the general rise in prices about the end of last year, offered by a survey of the conditions of the freight market, it may here be in place to touch on the fluctuations in freights. For those countries which are importers of bulky raw materials, freight costs play an important part. The industrial position of these countries may be appreciably impaired if a further rise occurs in freights, which at present does not seem improbable.

In times of prosperity, freights fluctuate much more widely and rise to higher levels than the prices of goods. This is due to a lack of elasticity in both the demand and the supply of sea transport. When all ships are commissioned, the supply of freight space is very rigid and the possibility of speeding-up the transport is more limited than of increasing production in most industries during a period of rising prices (through the introduction of shift work, etc.).

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[1] On a map drawn on such a small scale as Diagram 8, these coast zones appear only as somewhat heavy contour lines round the continents, 240 km. (about 150 miles) being represented by about 1 mm. (about 0.04 inch) on the map.

The choice of 100 and 250 km. respectively as averages limiting the width of the zones from the coast within which the heavy minerals and oil respectively can be economically exploited in undeveloped countries might be contested. However, it should be remembered that the distance to the nearest possible harbours is generally considerably greater than the distance to the coast, and that desert climate in some regions hampers exploitation. For these reasons and especially on account of the harbour difficulties, only one of several iron-ore deposits on the west coast of South America has been hitherto exploited on a great scale. The map should not be considered as indicating the accessibility to possible mineral resources of any single country or colony, but only as giving a general impression of the relative size of " actual " areas of the different continents.

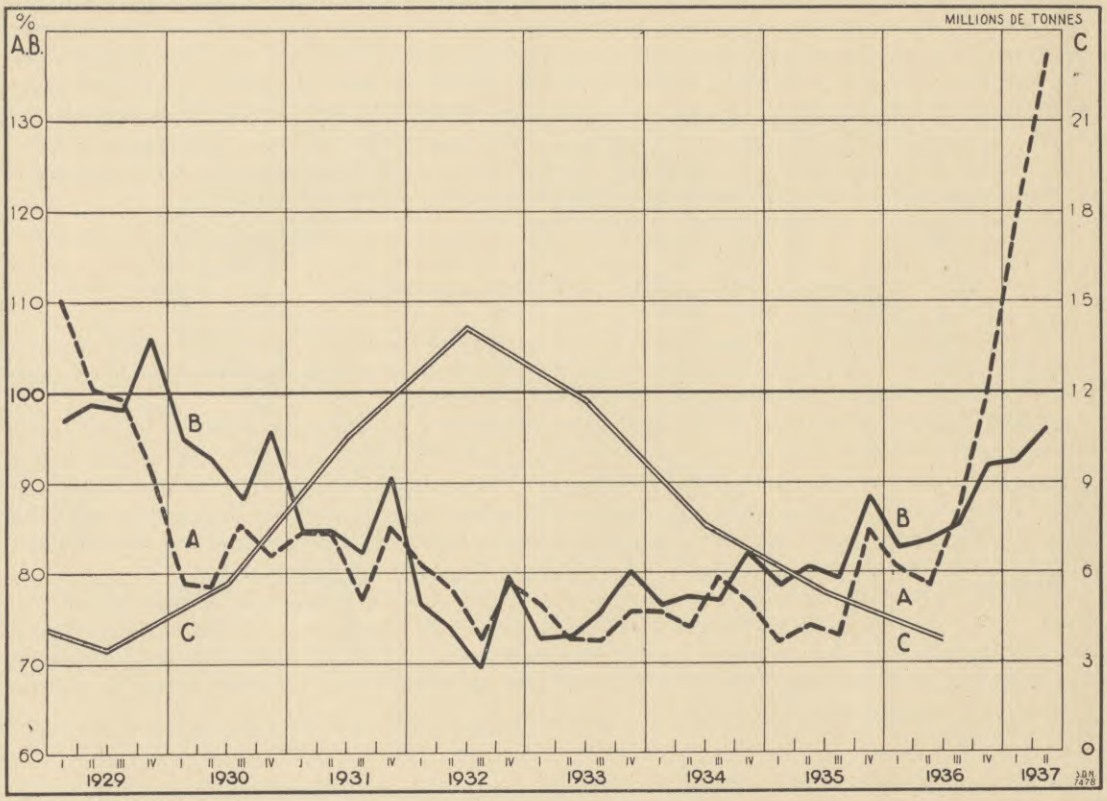
In times of depression, on the other hand, the offer of freight space becomes very elastic, and the changes in the state of shipping at such times are more clearly shown by the figures for laid-up tonnage than by the freight indices. The usual reason why ships are laid up is of course that the gross freights no longer cover the variable costs. Therefore, when freights fall during such a period, those ships which show the highest running costs are laid up, the offer of tonnage is reduced, and the fall in freights is checked. When freights rise, the

Diagram 9.

FREIGHT RATES, WORLD TRADE AND LAID-UP TONNAGE.*

A. Average shipping freight rates in sterling; quarterly movement (second month of each quarter), according to the *Economist*; 1929 = 100. Left-hand scale.
B. Quantum of world trade; quarterly movement; 1929 = 100. Left-hand scale.
C. Gross tonnage of laid-up ships. Right-hand scale.

* Diagram from *World Production and Prices* (League of Nations).



laid-up ships are put into commission, and the rise in freights is checked. Consequently, during the depression, small changes in the freight level were met and checked by large changes in the amount of laid-up tonnage. The freights were, broadly speaking, equal to the variable transport costs. But the adaptation did not take place so rapidly as to prevent minor brief fluctuations in the freight level. That was the situation until the last quarter of 1936.

The demand for cargo space varies greatly, but in most cases it is not much influenced by changes in the freight tariffs, because competition from other means of transport is limited and for most goods maritime freights constitute only a fraction of the c.i.f. price. Even considerable changes in freight costs are very little felt by consumers. A rise of 10% in grain freights under normal conditions will involve an increase in the European price of trans-ocean grain of 1% or 2%, an almost imperceptible rise in comparison with the fluctuations in grain prices occasioned by other causes. The relation between goods prices and freight costs, however, varies considerably for different classes of goods; in consequence of their low price per ton, bulky industrial raw materials in this respect occupy an extreme position; in their case, maritime freights constitute a larger proportion of the consumer's price than in the case of other goods. This applies above all to coal, iron ore, timber and phosphates. For this reason, it is important for countries importing these raw materials to follow the changes in the freight market.

The fact that the offer of freight space has such a rigid upper limit and that the demand, although varying, is inelastic produces a more marked difference in the case of shipping than in the case of most other industries. Prosperity due to a relative shortage in tonnage is followed by a higher and more fluctuating freight level than that corresponding to the general price level. Depression is characterised by a reserve of laid-up ships which checks the fall and fluctuations in freight indices.

On the graph (Diagram 9), the curve representing laid-up tonnage slopes down to a critical point somewhere about the end of 1936. The seasonal increase in the quantum of trade during the last quarter of 1935 was already clearly reflected in a considerable rise in the freight index, indicating that the effective reserve of laid-up tonnage was nearly exhausted. At the end of 1936, under the influence of a further recovery in trade and the seasonal increase, a definitive change-over from depression price mechanism to prosperity price mechanism took place, freights rising to a prohibitive level for certain transport or causing charterers to postpone their fixings. This seems to be one of the reasons why there has been no seasonal decrease in the quantum of world trade from the last quarter of 1936 to the first quarter of 1937.

On the whole, the freight market seems to offer the best illustration of the causes of the jump from the depression price level to the prosperity price level which took place at the end of 1936. The production of pig-iron (Diagram 10) probably offers the best example of similar causes of the rise in the prices of raw materials.

For various reasons an examination of the development of pig-iron production from 1929 till 1937 is of special interest. Pig-iron occupies a central position in the production of capital goods and, with the exception of steel, the production figures of no other single article give such an accurate picture of the general position of the capital industries. As illustrating the raw-material problem, pig-iron production has the further advantage (which steel has not) of affording an indication of the consumption of iron ore.[1] As previously stated, coal is far more important economically, and in the present report the general development of coal production has been discussed from other points of view. However, most of the iron-producing countries have their own coal resources and consequently experience no difficulty in providing coal for the coke demand of heavy industry, but most of them are to some extent dependent on the importation of iron ore. At the present time, certain difficulties exist for the satisfaction of the strongly increased demand.

During the second quarter of 1936, the world production of steel had already reached its previous highest level from the summer of 1929, while pig-iron production reached its previous highest figures only in the fourth quarter of the same year. Consequently, there was a phase difference—a lag of pig-iron production in relation to steel production—of about six months during the ascending period as there was during the descending period. In the diagram, this is reflected by the course of the curves, which lie closer to each other during the descending than during the ascending period.[2] This lag, however, indicates that pig-iron production, and consequently the demand for iron ore, may be expected to rise still further, even if steel production should become stationary at its present level (which in itself is improbable).

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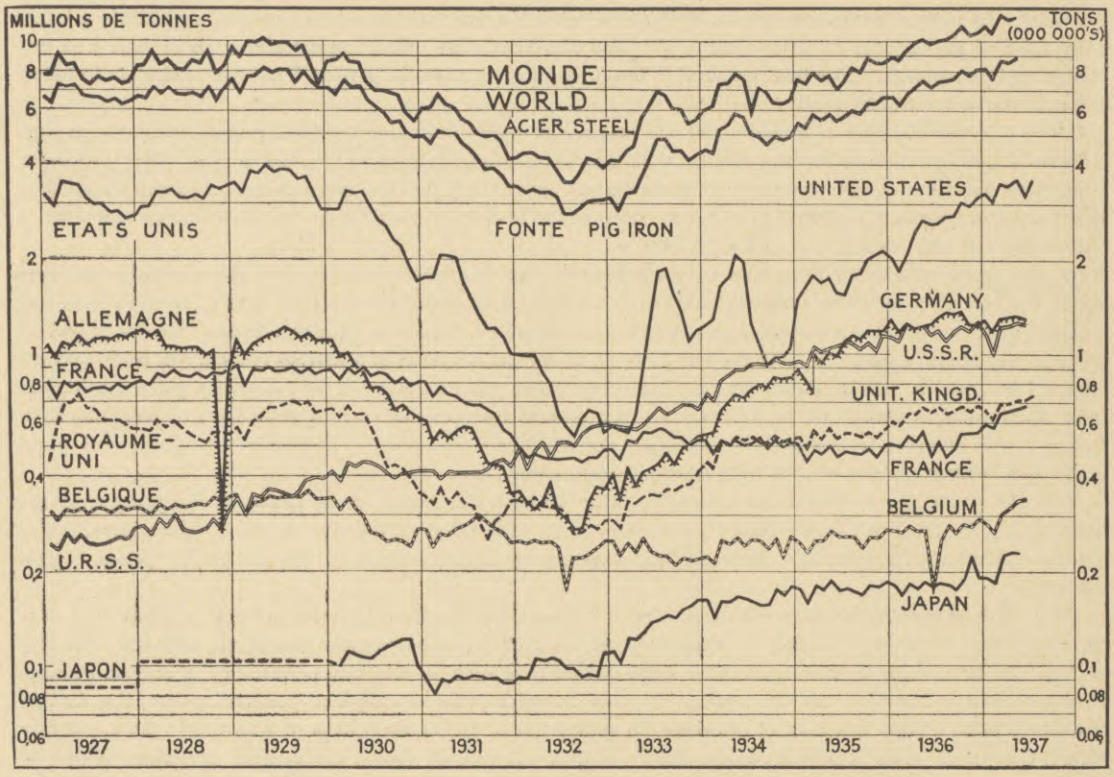
[1] And a more correct indication than would be afforded by the figures for iron ore itself, without re-calculation by metal content, reliable figures for which are not in all cases available.

[2] The same lag is to be observed in the production of individual countries. It has also been noticeable in previous cycles. The reason is partly because, technically and economically, the blastfurnaces are such heavy units and partly because the supply of scrap iron varies in different states of the markets, so that displacements occur in the basing of steel production on pig-iron plus scrap

Diagram 10.

World Pig-iron and Steel Production, and Pig-iron Production of the Principal Countries, 1927-1937. (Logarithmic scale.)



Some comments may not be out of place concerning the development in different countries.

Developments in the United States have been marked both by an exceptionally deep total decline and by sharp fluctuations in the course of the recovery process; this may in part be ascribed to State measures introduced against the crisis.

As regards the German production curve, it should be noted that, since March 1935, the monthly figures include the production in the Saar district. Next to the United States, Germany experienced the deepest decline during the crisis, but the recovery period has not shown the same sharp fluctuations as in the United States. The return to pre-crisis level was already practically complete at the beginning of 1936; since then production has shown an only moderately rising trend.

France has lost most in relative position since before the crisis. In contrast to the other large steel- and iron-producing countries, the production of which is based on domestic coal and partly on imported ore, French industry is based on domestic ores and mostly on imported coal and normally shows a surplus production of pig-iron in relation to steel. It is conceivable that this technical and economic difference may have worked out unfavourably for France. However, there are close similarities between the development of pig-iron production in France and in Belgium, and monetary policy seems to have been the main reason for the retardation of recovery experienced in both countries. So far, Belgium has also lost in relative position.

Production in the United Kingdom very nearly reached the previous top figures of 1929 during the first half of 1936.

The growth of production in the Union of Soviet Socialist Republics has been fabulous. It rose about fivefold from 1927 to 1936. The increase from 1932 to 1936 was about the same as the average for the rest of the world—*i.e.*, while building up new industries and training workers, the Union of Soviet Socialist Republics has managed to increase production at the same rate as other countries have been able, in the course of their industrial recovery, to re-start existing plants and put already trained workers in employment. Russian large-scale production has entered into world figures as a new factor and is now responsible for more than 10% of world production.

Owing to the lack of domestic ores and inadequate import facilities, the pig-iron production of Japan is still comparatively unimportant; nevertheless, it has been nearly doubled since before the crisis; the largest increase occurred in 1933. It may be added that the steel production of Japan, which has shown a still more persistent upward trend, is more than double the pig-iron production, an indication of the increasing dependence of Japanese industry on imports of pig-iron and scrap. A still larger relative difference between the pig-iron production and steel production is to be observed in Italy.

To return to the recovery of world production of pig-iron, it was highly disturbed during the first years from 1932 by the extreme fluctuations in the production of the United States, but, from the last quarter of 1934, the increase on the whole was even and corresponded to slightly more than 25% a year.[1]

In 1935 and 1936, and with more justification the longer this rapid and even increase of production continued, there was reason to ask whether recovery had not gathered such momentum that in all probability the limit of capacity would shortly be reached. The following argument seemed to lead to an expectation of a coming rise in prices; it should involve only a narrow margin of error as to the time at which this rise was to set in.

In the summer of 1929, when the highest production figures were reached, the world's capacity of mining equipment, blastfurnaces, steel-works and rolling-mills was fully employed. Particularly for the blastfurnaces, which are run in continuous production, the capacity limit is inelastic. Except in the Union of Soviet Socialist Republics, new constructions of blastfurnaces in relation to the total capacity of 1929 have been inconsiderable. In reality, one was inclined to assume that the 10% increase of world capacity occasioned by the evolution of Russian heavy industry had not much more than compensated for the reduction of capacity elsewhere by demolition or decay. In the absence of more precise figures, therefore, it might be assumed that the figures for world production in the summer of 1929 indicated the approximate limit of capacity towards which world production was rising by about 25% a year. An error of 5% in the estimation of world capacity would imply only an error of two to three months in estimating the date when world capacity would be fully used. The development of world production from the end of 1934 indicated that the top figures of 1929 would be reached about the new year of 1937.

Consequently, the pig-iron-production curve points to the full employment of existing capacity at about the same date as the curve for laid-up tonnage. In principle, the same reversal of the price-making mechanism is brought about. Instead of prices being mainly determined by variable costs only, they now rise until they become prohibitive for some consumers. In this case also, a critical point is passed as employment grows, even if phase differences in the recovery of production in different countries, and the existence of unmodern or less favourably located blastfurnaces—with a consequent rise in marginal costs before the limit of capacity is reached—, tend to make the change-over from one price mechanism to the other somewhat smoother than in the case of maritime freights.

It will thus be seen that, in two widely different branches of industry, both of importance for the general price level—viz., shipping and iron production—an extrapolation of the degree of employment of equipment during the last few years indicated that capacity would be exhausted at about the end of 1936, and the momentum of expansion has been such as to confirm the result of this extrapolation. In several other industries,

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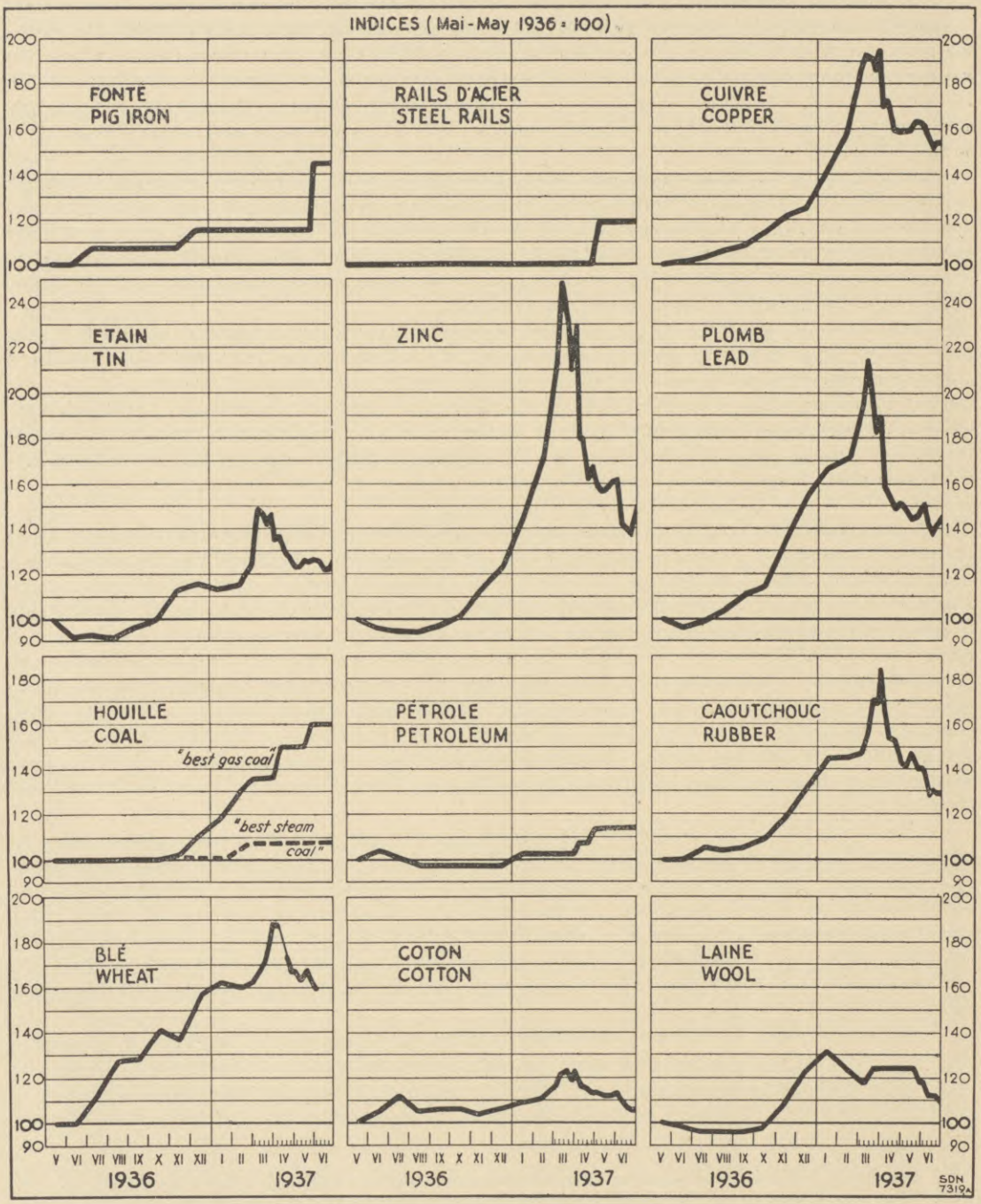
[1] The increase was still steadier than appears from the curve in Diagram 10, which has been based on monthly figures irrespective of the number of days in the different months. The downward notch in the curve, which is to be seen in February of each year, shows the importance of the varying length of the months.

Diagram 11.

MOVEMENT OF PRICES OF CERTAIN RAW MATERIALS, 1936-37.*



* Diagram from *Monthly Bulletin of Statistics* (League of Nations), No. 7, 1937, page 297.

the existing capacity was brought into full use at or about the same time, though this has not by any means been the case with all branches of production.

As a releasing factor for the general rise in prices, the seasonal upward swing in trade during the last quarter of 1936 was added.

Maritime freights and the prices of pig-iron and coal do not show any falling back from the peak in March 1937 to a considerably lower level in June-July as do the prices of most raw materials, and particularly the prices of the base metals, which are subject to considerable speculation (*cf.* Diagram 11). It is possible that the present price-level of about 140 (as against 100 a year ago) prevailing for pig-iron, most of the base metals, and rubber, represents a normal price-level covering variable and fixed charges and profit. The price-level during the depression, in most cases covering only variable costs, must in any case be considered as abnormal.

The reaction of the prices of different kinds of commodities to the influence of the recovery depends to a large extent upon technical conditions for an increase in production. We have already drawn attention to the importance of the inelastic capacity limit in the case of freights and pig-iron prices. The other extreme is most clearly represented by oil. Drilling of new wells is necessary for the maintenance of even a moderately falling production of oil (*e.g.*, during the years 1930 and 1931), as the production of a single well falls rapidly. There is therefore less difference between economic conditions for the production of oil during the different phases of depression and prosperity than in the case of other articles. Oil production can be said to have increased almost normally from the bottom level of 1932; no capacity limit was encountered when production reached the earlier maximum level, and the increase in prices from 1936 to 1937 was less than for any other mineral product shown in the diagram (with the exception of English steam coal, the production of which has not reached the pre-depression level).

In cases where cartel arrangements prevented a sudden price increase in the beginning of the year, price quotations were raised during the subsequent period of slump in the prices of other materials. It should also be observed that, in the case of tin, where an international regulation scheme is in operation, the price movements were less violent than in the case of other base metals, and it might be supposed that, without the operation of the regulation scheme, the price of rubber would have shown greater fluctuations than has now been the case.

In the preceding pages, only the change-over from the prices during depression to the prices immediately after recovery has been discussed, in order to draw attention to the fundamentally altered situation. It has not been considered necessary for the present purpose to discuss the influence of the expectations of entrepreneurs and other factors determining the working of the price mechanism under a period of normal development.

For prices, see following page.

PRICES USED FOR CALCULATING THE VALUE OF PRODUCTION AND EXPORTS SHOWN IN DIAGRAMS 1 AND 2.

FOODSTUFFS	Price $ gold per metric ton	Nature of price
Cocoa	65.6	London-Accra f.f.
Tea	332.3	Average export price — Ceylon.
Coffee	91.9	,, ,, ,, — Brazil.
Tobacco	460.1	Export value — United States.
Sugar	23.9	Weighted price New York Cuba 96%, excluding Customs duty. Prague 88° Rdt.
Rye	14.9	Warsaw-native, 1935/36.
Barley	9.4	Winnipeg, 1935/36.
Oats	13.3	,, ,,
Maize	8.0	Average export price — Argentine.
Rice	16.4	Saïgon No. 1, 25%; broken.
Wheat	19.8	Average export price — United States.
Potatoes	11.1	Berlin, red, 1935/36.
Mutton	110.25	Average export value — Argentine and New Zealand.
Pork	121.0	Export value — New Zealand, Australia, etc.
Bacon, etc.	248.0	Export value — Denmark.
Beef	80.9	Average export value — Argentine, chilled.
Veal	142.0	Estimate (based on various prices).
Cheese	154.5	Average export price — Netherlands.
Butter	261.7	,, ,, ,, — Denmark.
Milk	6.86 per hl.	Wholesale prices prescribed by Milk Marketing Board, United Kingdom.
Eggs	1.51 per 100 eggs	London — Danish (1 egg = 59 grammes).

INDUSTRIAL RAW MATERIALS	Price $ gold per metric ton	Nature of price
Coal	2.33	Average export price — United Kingdom.
Lignite	0.72	,, ,, ,, — Germany.
Petroleum	5.08	,, ,, ,, — United States.
Iron ore	1.4	Average export value — France and Sweden.
Pig-iron	7.9	Export value — France.
Steel	11.6	,, ,, — Belgium.
Gold	664.6 per kg. fine	
Copper	100.1	Average export price — United States.
Tin	629.3	,, ,, ,, — British Malaya.
Aluminium	275.0	New York — virgin metal.
Lead	40.9	London — foreign lead.
Zinc	40.7	London.
Silver	12.27 per kg.	New York.
Nickel	455.9	New York ingots.
Cotton	161.8	Average export price — United States.
Wool	139.9	,, ,, ,, — Argentine.
Raw silk	2,937.5	Milan.
Jute	36.5	Export value — India.
Wood	4.2 per cubic metre	Average export value (Comité international du Bois).
Wood pulp chem.	19.9	Sweden.
Wood pulp mech.	8.3	Sweden.
Rubber	146.1	Average export price — British Malaya.
Cottonseed	16.3	Export value — Egypt.
Ground-nuts	35.6	,, ,, — India.
Soya beans	23.3	,, ,, — Manchuria.
Olive oil	142.8	Spain — Tortosa fino.

Exportations mondiales de certaines denrées alimentaires et matières premières en 1935.
Poids en milliers de tonnes métriques.
Valeur (approximative) en millions de dollars-or (anciens) des Etats-Unis.

Note : Les articles sont classés dans l'ordre d'importance décroissant, en valeur.

World exports of certain foodstuffs and Raw Materials in 1935.
Weight in thousand metric tons.
Value (approximate) in million U.S.A. (old) gold dollars.

Note : The articles have been placed in order of magnitude, by value.

Article	Poids Weight	Valeur Value	Article	Article	Poids Weight	Valeur Value	Article
a) Denrées alimentaires — (a) Foodstuffs.							
Froment . . .	13,799	273	Wheat	Cacao	661.2	43	Cocoa
Sucre	10,751	257	Sugar	Fromage . . .	274.1	42	Cheese
Tabac	527.7	243	Tobacco	Viande de mouton	347.3	38	Mutton
Beurre	620.5	162	Butter	Orge	2,530	23.8	Barley
Café	1,667	153	Coffee	Seigle	1,010	15	Rye
Thé	432.9	144	Tea	Avoine	1,043	13.9	Oats
Riz	7,903	130	Rice	Pommes de terre	1,076	11.9	Potatoes
Viande de porc	543.6	117	Pork, ham, etc.	Oeufs	33.2	8.5	Eggs
Maïs	9,584	77	Maize	Lait	33.3	2.3	Milk
Viande de bœuf	881.5	71	Beef				
Viande de veau [1]	...	...	Veal [1]				
b) Matières premières industrielles — (b) Industrial Raw Materials.							
Pétrole . . .	101,179	514	Petroleum	Minerai de fer .	38,500	54	Iron ore
Coton	3,106	503	Cotton	Arachides . . .	1,431	51	Ground-nuts
Or	[2] 587.2	390	Gold	Fèves de soya .	2,165	50	Soya beans
Charbon . . .	140,000	326	Coal	Plomb	805	33	Lead
Bois	[3] 51,674	219	Wood	Jute	858.6	31	Jute
Laine	1,175	164	Wool	Nickel	63.6	29	Nickel
Caoutchouc . .	1,097	160	Rubber	Huile d'olive .	200	29	Olive oil
Soie grège . .	47.1	138	Silk, raw	Aluminium . .	89.4	25	Aluminium
Cuivre	1,240	124	Copper	Zinc	597	24	Zinc
Etain	150.8	95	Tin	Fonte.	2,248	18	Pig iron
Pâte de bois .	5,258	93	Wood pulp	Graine de coton	819	13	Cottonseed
Argent	[2] 4,697	58	Silver	Acier	914	11	Steel

[1] La *production* mondiale de viande de veau représente environ un septième, en poids (et un quart, en valeur), de celle de bœuf. Les chiffres d'exportation ne sont pas disponibles.
[2] En tonnes métriques.
[3] Milliers de mètres cubes.

[1] World *production* of veal is about one-seventh, by weight (and one-fourth, by value), that of beef. Export figures not available.
[3] Metric tons.
[2] Thousand cubic metres.

Annex II.

THE IMPROVEMENT OF REGULATION SCHEMES.

Memorandum prepared, at the request of the Committee, by two of its Members specially competent in This Sphere.

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1. The Committee's report points out that the operation of regulation schemes during recent months has been open to the criticism that it has not succeeded in preventing substantial rises in price, and recommends that some means should be found of improving the machinery of the schemes to overcome this defect. Some fluctuation in prices is natural and inevitable, but the complaint in the present case is that the fluctuations have been so excessive as to injure the interests of consumers of regulated commodities.

2. The regulated commodities in which the most striking rises occurred were rubber and tin. It is true that these rises were simultaneous with, and of the same order as, rises in the price of other non-regulated commodities and that they have since been followed by substantial falls, but the creation of these regulated schemes was justified on the ground that they would bring the prices of the regulated articles up to a reasonable level and keep them there. It is true that, so long as there are only a very few commodities subject to regulation, it is impossible to insulate their price movements entirely from outside influences, but it is not sufficient defence to say that the prices of non-regulated commodities have fluctuated at least as widely as those of regulated commodities; one professed object of the schemes is to prevent fluctuations, and the fact that fluctuations of this magnitude have occurred, in spite of every effort on the part of the controlling bodies to prevent them, suggests that the present machinery of the schemes is inadequate in emergencies.

3. On the other hand, the successful operation of the schemes over a period of some years before the recent crisis is evidence that, in normal times and in the absence of some special factor disturbing the market, the machinery of the schemes is fundamentally sound and that all that is required is the addition of some reserve power of control over the market to meet special emergencies.

4. The recent sharp rises in price appear to have been due to a rather sudden expansion in demand which found the producers unprepared. The stocks available on the market appeared to be less adequate than had been supposed and, as always happens in such cases, the initial rise of price brought more speculators into the market, so that part of the stocks, the adequacy of which was already doubtful, were sterilised and withheld from the actual consumers, who themselves were buying in excess of their normal requirements. Immediate steps were taken, by increasing quotas and stimulating production and export, to increase available stocks, but a substantial period of time elapsed before these steps actually produced an increase of supplies and before prices were brought down again. Indeed, in the case of tin, prominent producers have recently expressed the opinion that the price is still too high, an opinion which would no doubt be shared by the consumers.

The delay in increasing available supplies which occurred on the present occasion could not under existing conditions be avoided if a sudden unforeseen expansion in demand occurred in the future. In any case, there is necessarily an interval before even a moderate additional supply of a commodity can be produced and shipped to the consuming markets; but in particular, when the production of a regulated commodity is already at a high level—that is, the quota is 80% or upwards—fairly elaborate arrangements have to be made before production can be further increased by more than a relatively small proportion. Additional labour has to be obtained, possibly from another country, and perhaps extra machinery has to be installed. All this takes time and costs money, and producers may well be reluctant to make expensive and possibly permanent additions

to their undertaking in order to meet what may be only a passing emergency. They may argue that a more moderate expansion of production will in the long run suffice to restore equilibrium to the market, and, indeed, it may well be in the interests of the whole industry that the expansion, if required, should be effected in this way and not by more violent means. The control of sudden fluctuations of price which are due to temporary market conditions and not to more long-range influences should therefore be effected by some means other than sharp alterations of quota.

5. This statement, however, requires the qualification that it is applicable primarily to fluctuations in an upward direction. So long as the production of a commodity is under effective control and there is no immediate prospect of that control being terminated, it is almost impossible for the price, after reaching what is regarded by the controlling body as a reasonable level, to fall seriously below that figure, except in some such sudden transitory emergency as a bank crisis or some other phenomenon affecting all commodity markets. Apart from such a crisis, or the prospect that control is going to be terminated, the price could weaken seriously only if there were excess stocks on the market, and it is unlikely that such excess stocks would appear unless there was a sudden slackening of demand. Such excess stocks could soon be liquidated by a reduction in the quota below current consumption. The effect of such a reduction on the price would be very rapid. As soon as releases are reduced below the current rate of consumption, stocks obviously become desirable things to hold, since, *ex hypothesi*, they will before long be absorbed by consumption at a price higher than that at which they stand when the reduction is decided, and this fact would automatically influence the price. It must not, however, be supposed that a sudden reduction of output can be effected without inflicting hardship upon producers, and there may be occasions on which the existence of some organisation ready to take over and hold the excess stocks would be very valuable to producers. It would protect the price-level at a time when this was particularly necessary and so would enable the reduction of output to be effected in a more gradual way.

6. In order to increase the elasticity of producing industries operating under regulation schemes by enabling them to meet sudden additional demands, experiments have more than once been made in forming " buffer stocks " of regulated commodities, that is stocks which are segregated from the market and released only when there are particular reasons for doing so. So far as tin is concerned, there have been three buffer stocks, one semi-official formed in August 1931 and liquidated in the second half of 1933, one unofficial which operated in 1934, and one official which covered about eight months in 1935. It is almost universally agreed that prices in the tin market have never been as steady as they were during the period when the buffer stock schemes were in operation. (The first scheme was adopted during the period when prices were still unduly low, and was an important factor in accelerating their rise to a reasonable level.) In the case of certain unofficial regulation schemes or cartels, such as, for example, the aluminium cartel, is is understood that the maintenance of stocks in the hands of producers at or above a fixed minimum amount (a practice which is not identical with that of holding a buffer stock but has much the same effect) is one of the permanent features of the arrangement.

7. One means of increasing at short notice the market stocks of a regulated commodity in the countries of consumption, and so checking sharp upward movements of price, would be to adopt as a standard part of all regulation schemes the practice referred to above of keeping some stocks in the countries of production, or at any rate under the control of the producers, which could only be marketed in special circumstances. One provision of the recently concluded Sugar Agreement is that the cane-sugar-exporting countries shall take steps to ensure that, at a given date in each year, they have a stock equivalent to not less than 10% or more than 25% of their annual production. The tin and rubber schemes provide that stocks not exceeding a fixed part of their annual exports may be held in countries of production, but in these cases there is no minimum amount of stocks which must be kept, and in the case of tin the provision relates to tin ore and not smelted tin. In practice, for a variety of reasons, the stocks held have been much below the permissible amounts in both cases.

8. It might at first sight appear that greater stability in the prices of regulated commodities would be secured by making some such standard provision in all regulation schemes. There are, however, some objections to an arrangement of this kind and, while it would be desirable to make this change, if circumstances prevented

any more effective scheme from being put into effect, it is unfortunately not possible to feel any great confidence that such an arrangement would assure price-stability.

9. In the first place, it is almost inevitable that the purchasers of the regulated commodity would take these stocks, when formed, into account in framing their market policies—that is, if the stocks were accumulated as an addition to existing stocks, the price would tend to be depressed to a lower level than would otherwise be justified, because they would be considered to be immediately available; on the other hand, the committee managing the schemes would almost inevitably take them into account in framing its policy regarding releases —that is, if prices were depressed in this way, it might regard it as an indication that stocks were unduly large and might consider it necessary to follow a policy of reducing total stocks, including the stocks in producing countries, until a more reasonable level of prices was reached. In these circumstances, the result of the arrangement might in the end be to reduce the normal market stocks in consuming countries by an amount equivalent to the amount of reserve stock established in the producing countries, and this would make the scheme less, and not more, elastic than before, since some time would necessarily elapse before these stocks could be put at the disposal of consumers and a sudden increase of demand might disclose a serious shortage of stocks immediately available.

10. In the second place, there might be great difficulty, more particularly from a financial point of view, in arranging that substantial reserve stocks of this kind should in fact be held in producing countries. The establishment of the stocks would involve the provision of capital to finance the stocks themselves and perhaps to erect accommodation for them, and also the payment of recurrent charges for maintenance. Even if the general obligation of the producing countries to hold these stocks were recognised, it would not be easy to convert this general obligation upon the country into a specific obligation upon the individual producer to hold his share of the stock, since almost every producer might well find good reason for arguing that he at any rate should be exempted. Indeed, they might even argue that, since the buffer stock was being created primarily in the interests of the consumers, the consumers themselves should accept the liability involved. It is true that a good deal less objection would be felt in the particular case of tin, if the obligation were to hold tin ore and not smelted tin, but the addition of the time taken in smelting to the time taken in shipping would make the accumulation of a stock of this kind even less effective than a local stock of smelted tin in preventing sudden fluctuations of price.

11. There is, in fact, some substance in the argument that the maintenance of a buffer stock is a responsibility rather of the consumer than of the producer. Indeed, in the case of rubber, the large consumers have not only claimed the right, but also recognised the obligation, to maintain very substantial stocks under their own control. But there is much more substance in the argument that the buffer stock is required because without it a regulation scheme devised primarily in the interests of producers might inflict serious injury on the consumers, and that a definite obligation rests upon the producers to frame proposals for a buffer stock scheme, unless by some other means they can guarantee that severe fluctuations in price will not occur in future. Furthermore, there is the practical difficulty that the consumers are not in any sense a body which can be organised in the same way that the producers have been organised. In the case of tin, for example, the official statistics relate to seven producing and twenty-eight consuming countries and there would be the same disproportion between producers and consumers in any other commodity the production of which could be regulated.

12. At the same time, the fact must be faced that, even though all buffer stocks have hitherto been operated solely by producers, their operation has given rise to certain difficulties, and the prospect that producers, if left to themselves, would be able or willing to produce anything more ambitious or effective than a scheme on the lines described in paragraph 8 above appears to be remote. If they were prepared to propose a scheme for a buffer stock to be financed by themselves and operated by the Committee controlling the scheme, the arrangement would avoid many difficulties inherent in any scheme framed on other lines, but, as stated above, the prospects of such a scheme materialising for any of the commodities now subject to regulation appears to be remote.

On the other hand, the operation of a buffer stock solely by consumers would undoubtedly give rise to even greater difficulties, if indeed it could be created at all.

13. In these circumstances, the real fact appears to be that no scheme for a buffer stock of any regulated commodity is likely to come into existence, unless some of the largest consumers or the Governments of the principal consuming countries decide to make a joint proposal for a buffer stock scheme to the body controlling the scheme and ask them to give that co-operation which, as has been pointed out above, they are under every obligation to give. The essential features of any such scheme would probably be that control should rest in a small body, possibly with an independent chairman, on which equal representation was given to producers and consumers, that the finance should be provided principally or entirely by the consumers, that the ownership of the stock on the dissolution of the arrangement should vest in them, and that the obligation to make supplies available as required should lie upon the producers' representatives.

14. In regard to the initial formation of the buffer stock, it must be borne in mind that an essential feature of all regulation schemes is that the rate of release should be so adjusted as to keep stocks at an adequate but not excessive figure. If a buffer stock is to be formed, therefore, in addition to the normal stock, it can only be formed from a special quota—that is, an addition to the rate of release specially allowed for this purpose, and such an addition could be allowed only by the committee managing the scheme. It is obvious, therefore, that the first essential is that this committee should agree to the formation of a buffer stock and should be prepared to assist it. In practice, what would probably happen if it were finally decided to form a buffer stock in any regulated commodity would be that the formation of the stock would be postponed until releases, which are now at a comparatively high level, were due to be reduced, and that the arrangement would be that the rate of release would be kept at its existing figure and that the margin so created would be earmarked for the buffer stock.

15. Even if this special addition to the rate of release were made, use could not be made of the privilege unless arrangements were made to finance the supplies so produced. In the case of the official buffer stock of tin, the arrangement was that the Governments of the producing countries paid to producers who were prepared to contribute to the buffer stock an amount equal to the out-of-pocket expenses incurred in producing the tin put into the stock, the Governments also met the financial expenses involved in carrying the stock, and finally, when the scheme was wound up, after recovering their own expenses, they distributed the surplus remaining to the original contributors to the stock. So far as these contributors were concerned, therefore, the upshot was that for the tin which they put into the stock they received immediately an amount equal to the cost of producing it and ultimately an additional amount which brought their total receipts per ton up to a figure approximating to the price per ton of tin at the time when the stock was formed. It is doubtful whether a buffer stock of any commodity could be formed to-day under conditions which would afford reasonable guarantees that the contributors to it would eventually obtain a price equivalent to the price which they could secure by sale of their product over the period during which the buffer stock was accumulated.

16. For example, in the case of tin, a buffer stock could not in fact be formed at all at present, for actual exports are in the aggregate much less than the permissible exports at the present time; but, even when this rights itself and conditions arise in which an addition to the normal rate of release could be allowed in order to form a buffer stock, it is probable that the price would still be at such a level that tin put into the stock, at any rate in the initial stages, would in the end realise less than its market price at the time when it was put in.

17. It is obviously difficult to suggest that the Governments of the exporting countries should be invited to assume a liability for any such loss in connection with a buffer stock, and it is unlikely that any producer would be willing to put tin into a buffer stock without some fairly definite idea of what his ultimate receipts in respect of it would be. It would, however, be worth the while of a producer of, say, tin to put tin into the stock at something less than the current price, if the metal so put in were tin which otherwise he would not have been permitted to produce, since, for a producer working at a moderate rate of activity, the expense involved in working at a slightly higher rate of activity is relatively small.

18. It is probable, therefore, that, when the potential productivity of the tin industry becomes substantially in excess of the rate of production allowed under the scheme, individual producers would be prepared to offer tin to the buffer stock outside their normal quota at a price above their out-of-pocket expenses but substantially below the market price, provided they were paid cash on the spot for such tin. Indeed, if the

arrangement were that producers selling tin to the buffer stock were entitled to share in the ultimate profits, if any, they might—depending on their view of the probable course of events—be prepared to sell tin to the stock at an even lower figure than they would be prepared to take if the transaction were simply an outright sale. The same is probably true of other regulated commodities.

19. Such an arrangement, however, would only be possible if finance for the scheme were found principally, if not entirely, from some source other than the producers, and the only possible source appears to be those large consumers and Governments of important consuming countries who are prepared to constitute themselves into the consumers' side of the body controlling the buffer stock.

This would involve as an inevitable part of such a plan the acceptance of a certain risk by those who provided the finance; but the risk would be relatively small for two reasons. In the first place, if the material were taken into stocks at the actual out-of-pocket costs—that is, the actual cash cost of production without making any allowance for overheads, interest or profit—this figure would be considerably below the present market price and so would give a wide margin of safety. In the case of tin, for example, the out-of-pocket cost would probably be in the region of £90 to £100 a ton against a present market price of between £250 to £260. In the second place, the scheme itself gives a certain security, but prices will not drop during its existence to such an excessively low level as to involve the buffer-stock holders in an actual loss.

20. Provided that such consumers and Governments were ready to supply the necessary funds, there is no reason to anticipate difficulty in forming a buffer stock in this way, when conditions of production and consumption are favourable to such an accumulation. There would, however, be certain difficulties in administering the stock, even if the committee managing it were constituted on the lines set out above, and, in particular, it would be necessary to decide in the very earliest stages how and in what circumstances it should eventually be liquidated. It must be remembered that the object of creating the stock would be to improve the efficiency of the regulation scheme, and the buffer stock would therefore lose its *raison d'être* if the regulation scheme came to an end. When the official tin buffer stock was formed, it was provided that it should be liquidated before the scheme came to an end, and this would be essential in the case of any buffer stock for which the producers alone had the financial responsibility, since it would normally be necessary to reduce the export quotas in the last stages of the scheme to enable the buffer stock to be merged in the normal stock without upsetting the market and consequently the price. Thus, if a buffer stock of, say, tin were formed at the producers' risk, it would be essential that it should be liquidated during the life of each regulation agreement and re-formed again after the agreement was renewed, unless renewal were agreed upon some considerable time, say a year, before the expiration of the original scheme.

21. A buffer stock which was financed entirely by consumers, however, would not be open to this disability, for the consumers in any case require regular supplies of the commodity, and could simply take over the stock for their own use on the termination of the regulation scheme, and the only risk which they would run is that the price at that time might be below the price at which the buffer stock was being carried. Thus the renewal of the regulation agreement would not necessarily involve on each occasion the liquidation and re-accumulation of a buffer stock.

22. It is, however, inconceivable that the producers would consent to, and assist in, the formation of a buffer stock held by consumers unless they were assured that it would be liquidated very gradually when the regulation scheme finally came to an end, so as not to disturb the market at that time.

Provided that an agreement could be reached on this and the other matters referred to above, there would not appear to be any insuperable difficulty in forming a buffer stock financed exclusively or principally by the consumers on the lines set out.

23. So far as the day-to-day administration of the buffer stock is concerned, the object of creating the stock is to prevent prices from rising to excessive heights, and it is therefore clear that the stock should be kept intact until this state of affairs arose. In practice, it would no doubt be necessary to fix some price at which releases from the stock would be permitted, and the body administering the stock, or preferably a very small sub-committee of that body—consisting perhaps of the chairman, one consumer representative and one producer representative—would be at liberty to make releases from the stock at any time when the price was at or above this figure. This pivotal figure could of course be varied from time to time and might be published

in advance or kept secret. Even if it were kept secret, however, it is inevitable that it should become known to the market if any substantial quantity was released from the stock.

24. Another point for decision is whether the buffer stock should be placed in such a warehouse or warehouses that its quantity became known or whether it should be kept under such conditions that its quantity was secret. It has been pointed out above that stocks kept in the country of production would almost inevitably be regarded as stocks immediately available and the same would be true of a buffer stock, wherever it was kept, provided that its amount was known. Indeed, experience shows that this is the case. In these circumstances, it seems desirable that an attempt should be made to keep the amount of the buffer stock secret. It is, however, very doubtful whether this could be done. For the most important primary commodities the trade statistics are so precise that the movements, and the amount, of a buffer stock could be estimated with fair accuracy by persons operating in the market.

25. It is not improbable that the producers, if they consented to the formation of a buffer stock on these lines, would also desire to make it a condition that the body administering the buffer stock, as well as making releases from the stock if the price reached a particular height, should agree to purchase supplies in the open market if the price fell to some agreed low point, at any rate until their financial liabilities in regard to the buffer stock had reached some agreed figure. This would seem a logical completion of the scheme, though, as pointed out above, a committee administering a regulation scheme is in a much stronger position to correct an excessively low price than an excessively high one. In these circumstances, such an arrangement, if made, would probably not come often into effect.

26. To sum up, if the regulation schemes now in existence are to be improved by the creation of machinery for correcting excessive movements in price, particularly in an upward direction, it would appear that a possible method would be for the Governments of the principal consuming countries to form committees for the purpose and to invite the committees administering the schemes to send representatives to co-operate with them to form and operate a buffer stock.

The buffer stock committees so constituted would negotiate with the regulation committees for the grant of a special buffer stock quota outside the ordinary rate of release, and, when it was granted, would negotiate with the individual producers for the purchase of the appropriate part of their production at a price which was above the cost of production but below the market price, either outright or on some form of profit-sharing terms.

Conditions of the agreement would be:

(1) That no release would be made from the buffer stock except at a high point of price to be agreed from time to time between the consumers' and producers' representatives on the controlling body;

(2) That further additions would be made to the buffer stock from the open market if the price fell to a low point to be agreed from time to time in the same way;

(3) That, if the regulation scheme came to an end, the liquidation of the buffer stock would be spread over a period to be agreed in advance.

It would be necessary to decide whether those prices should be secret or not, and whether the buffer stock should be held in such a way that its amount could as far as possible be kept secret.

The details of the arrangement would no doubt vary in each case, but the above outline appears to be the best one that could be devised, unless there is some prospect of the creation of a buffer stock administered solely by the producers.

27. If the technical and other difficulties, set out above, in the way of creating a buffer stock can be overcome, it is possible that the organisation created for the purpose could also be made to serve the purpose of assisting consumers in countries which are embarrassed by the lack of raw materials to secure quantities of the raw materials, which otherwise they would be unable to obtain. Such consumers, while they were not in a position to find the necessary foreign exchange for the purchase of raw materials, might be in a position to guarantee payment within a fixed period after the delivery of supplies. The organisation holding the buffer stock would be financially in a strong position, particularly since it would probably be in

possession of stocks purchased at a price below the market price, and thus might be able to make supplies available against payment at a future date. This could of course only be done if the buffer stock was of substantial dimensions, but the transaction would be of benefit both to the consumers thus supplied, who would obtain supplies otherwise unobtainable, and to the organisation administering the stock, which would make a profit on the transaction and thus be helped to meet the expense of carrying the stock, and to the producers, who would be able to produce an extra amount, which could not otherwise have been produced, in order to replenish the buffer stock.

The matter is obviously one which would require considerable study, but it seems worth pursuing as one means of increasing the volume of international trade.