

Fourth Annual Report
of the
United States Tariff Commission

1920



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UNITED STATES TARIFF COMMISSION.

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LETTER OF SUBMITTAL.

UNITED STATES TARIFF COMMISSION,
Washington, December 6, 1920.

MY DEAR MR. SPEAKER: In compliance with the provisions of section 703 of the act of Congress approved September 8, 1916, "to increase the revenue and for other purposes," I transmit herewith a copy of the fourth annual report of the United States Tariff Commission.

Very truly yours,

THOMAS WALKER PAGE,
Chairman.

HON. FREDERICK H. GILLETT,
Speaker of the House of Representatives,
Washington, D. C.

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FOURTH ANNUAL REPORT OF THE UNITED STATES TARIFF COMMISSION.

WASHINGTON, D. C., *December 6, 1920.*

To the CONGRESS:

The United States Tariff Commission begs to submit herewith its fourth annual report, covering the fiscal year 1919-20.

CHANGES IN PERSONNEL.

By the resignation of Hon. William Kent, of California, which took effect March 1, 1920, the commission lost the aid of one of the members appointed by the President at the time of its establishment four years ago. Mr. Kent had personally conducted several important investigations upon which reports have been made and had actively participated in others. His knowledge of public affairs, his experience in business, his wisdom and liberality of mind were given with unflinching devotion to the successful performance of the duties laid upon the commission by the law under which it was created. His resignation following upon that of Hon. F. W. Taussig leaves two unfilled vacancies in the membership of the commission.

INADEQUACY OF APPROPRIATION.

When the act of Congress was passed which determined the work to be done by the Tariff Commission it was impossible to foresee what expenditures must be made to carry on that work with success. It was estimated that they might be covered by an appropriation of \$300,000 per annum. Experience soon disclosed the inadequacy of this sum. Even under the conditions then prevailing, it would have been impossible for the commission to prosecute all the lines of activity enumerated in the law, and the situation has become much more difficult by reason of the increase during the past four years in the cost of everything for which the commission must pay. Traveling expenses of investigators in the field, the salaries of scientific and business experts, payments for temporary special services, expenditures for foreign inquiries, and many other important items have reached levels much higher than was contemplated at the time the commission's duties were fixed. As a result it has been impossible for the commission to maintain a staff large enough to cover with completeness the whole field assigned to it by law. It was unable to pay salaries sufficient to secure the services of experts in many branches of industrial and commercial investigations, or even, indeed, as the remuneration offered by business enterprises continued to grow to hold in its service some highly esteemed members of its staff. Its work, therefore, has frequently been delayed by the withdrawal of experienced employees and the difficulty and delay in replacing them. Its inquiries in foreign countries have been hampered and greatly reduced in scope by lack of funds. For the same

reason it has been impossible to keep entirely up to date many investigations both in this country and abroad that were carried out during the past three years.

The commission ventures to bring this matter to the attention of the Congress, not as an apology for the character of the work it has done, but as information regarding an insuperable obstacle to the full discharge of its functions. The commission takes occasion further to direct attention to the fact that during every year of its existence, in spite of its urgent needs, it has scrupulously lived within the appropriation assigned to it. Receiving neither emergency nor deficiency appropriations, it has sought to use to best advantage in the public welfare such funds as were put at its disposal.

An outline of the activities to which these funds have been devoted during the past year is presented in the following pages of this report.

FORMER RECOMMENDATIONS RENEWED.

The Tariff Commission renews its recommendations contained in the commission's third annual report under the ensuing heads: "Interim legislation"; "Customs administrative laws"; "Foreign trade zones"; "Dumping and unfair foreign competition in the United States"; "Reciprocity and commercial treaties."

To emphasize the importance of the respective subjects mentioned the commission repeats what it said in its last previous annual report, as follows:

INTERIM LEGISLATION.

The cessation of war activities once more makes opportune a reference to a recommendation, originally made by the commission to Congress in 1917, of noncontroversial legislation with important revenue features. For its fuller discussion, the commission's interim report should be consulted. In that report, in response to a request from the Ways and Means Committee for suggestions of possible revenue legislation, the commission urged that, independently and in advance of other tariff and revenue enactments, especially prior to tariff and internal revenue increases, statutory provision be made whereby duties and taxes shall attach to merchandise previous to the date of the final passage of tariff and internal revenue laws. In making its recommendation the commission designated as "the interim" the period between a time to be fixed in a revenue bill, or between the time of the report of such measure by the Ways and Means Committee to the House of Representatives, and the date of the definite enactment of the measure into law. With statistical corroboration, the familiar fact was pointed out, that, where increases in customs duties and internal taxes are under consideration and probable, importations are "rushed" and with drawals from bonded warehouses multiplied, with the manifest purpose of avoiding the anticipated new duties and taxes. The result is a loss of possible revenue to the Government, and, as business is ordinarily conducted, the consumers do not benefit by the process, since the merchandise can be, and commonly is, thereafter sold at prices in which are included the increased duties of the subsequently enacted legislation.

European countries and Canada do not neglect this available and fruitful field for revenue. The United States, by disregarding it, has frequently overlooked a very considerable possible income which might have been collected without increasing the tax on consumption. In the five months during which the revenue law of 1897 was under consideration the potential duties thus collectible amounted to approximately \$74,000,000. In a like interim period, prior to the adoption of the revenue law of 1909, more than \$2,500,000 of procurable revenue was similarly passed by. In the field of internal revenue taxes, the withdrawals of distilled spirits from warehouses, prior to the enactment of the law of 1894, which provided for increases, deprived the Government of more than \$18,000,000, which anticipatory legislation would have secured; and, in 1898, there was a corresponding immunity extended with reference to fermented liquors, manufactured tobacco, snuff, cigars, and cigarettes of approximately \$8,700,000. Again, in 1917, when increases in customs duties and internal

revenue taxes were under debate, withdrawals from bonded warehouses assumed proportions which gave a new object lesson in the wisdom of providing for such recurring contingencies.

Attention may be called again to the fact that Congress has at times recognized the practicability and soundness of the legislative policy under consideration. By the war revenue acts alike of 1893 and 1917 Congress provided that goods, even though withdrawn from bonded warehouses, if still within reach in trade, should be, at least partially, subject to increases. Under the revenue act of 1864, which provided for increased taxes, vendors were allowed to collect from vendees any taxes unexpectedly imposed on goods sold. Unexpected tax burdens, due to the performance of bona fide contracts, were similarly relieved by section 1007 of the revenue act of 1917.

Prior to making its original recommendation to Congress, and again, before renewing the suggestion in its first annual report, the commission investigated with some care the possible consequences of such legislation, in the case of imported merchandise, both on outstanding bona fide contracts and on general business conditions. As a result of its inquiries, the commission is persuaded that no serious burdens would be imposed on business by such legislation, if accompanied by the safeguards thrown around bona fide outstanding contracts for future delivery by the acts of 1864 and 1917. In fact, where importations are concerned, contracts for future delivery very generally provide that increase in duties, subsequent to the agreement to deliver, are to be paid by the purchasers.

It may be added that the administrative problems involved would be sufficiently solved by authorizing the Secretary of the Treasury to require the giving of a bond to cover subsequently enacted increases.

CUSTOMS ADMINISTRATIVE LAWS.

The commission would be unmindful of its obligations if it omitted to renew the suggestions that its report of August 26, 1918, on the operation of the customs administrative laws of the United States deserves immediate and independent attention. The subject matter is of prime importance. The work done by the commission was undertaken without predisposition, and, with expert assistance, was continued through many months. Moreover, scarcely a day of the recent extra session of Congress failed to emphasize the desirability, if not the necessity, of consideration being given to the fundamental phases of that report.

By way of illustration, it is appropriate to mention the proposals pending in Congress for the establishment of foreign-trade zones and for antidumping legislation. In each of these measures, as in all tariff legislation, the proper bases of dutiable values are indispensable considerations, and it is clear that these bases should be reexamined, and, after every applicable reason has been weighed, should be determined in the existing customs administrative laws of the country. For instance, there is much considered opinion, as well as experience, requiring review, in order adequately to answer the occasional inquiry whether it is wise to substitute the American selling price, as a primary basis, for the actual foreign market value of merchandise. This problem is one, among many, which can best be dealt with in hearings on and discussions of the proposed complete codification of our customs administrative statute.

It is scarcely necessary to repeat that certain of these laws are an inheritance from the stage-coach days of 1799, and are ill adapted to the present age; also that present customs administrative enactments contain much surplusage, frequent obscurity, and provisions so severe in their practical operation that they have long and continuously led to just complaints that the Government is placing unreasonable burdens on commerce.

Among the recommendations in the commission's report which promise increased customs efficiency, or relief from antiquated requirements, may be enumerated the following: A reduction to a minimum of the number of bonds to be exacted from importers; less burdensome conditions surrounding and preceding the payment of drawbacks; the freer use of bonded warehouses and the removal of vexatious restrictions on handling, sorting, manipulating, and manufacturing merchandise; the authorization of direct shipment of merchandise to its customs destination and its appraisal there; readjustment of the bases of dutiable values, so that the actual foreign market value and the American selling price of goods shall both precede, in the order just stated, the foreign cost of production; the appointment of collectors and other customs officials by the Secretary of the Treasury instead of by the President; and, in cases either of unintentional undervaluation or unintentional overvaluation, authority, on satisfactory proof of good faith, permitting the Secretary of the Treasury to remit or refund any duties in excess of those which would otherwise be collectible.

That such codification may properly be undertaken separately and prior to tariff revision is evident, when it is remembered that such revision normally deals with the rates of duty levied on imports, whereas customs administrative laws prescribe the procedure governing the collection of such duties. Therefore, wholly without reference to any tariff policies Congress may hereafter determine to adopt, the changes above cited and others provided for in the commission's draft are considered of immediate urgency, particularly because of altered conditions due to the war, as a means of establishing an up-to-date, satisfactory, and scientific American customs administrative system.

FOREIGN-TRADE ZONES.

In connection with its investigation begun shortly after the organization of the Tariff Commission, the assembling of data on the subject of "free" or "foreign-trade" zones in ports of entry has been continued. The inquiry has been exhaustive and complete, covering not only the practice and results in foreign countries and the adaptability of the device to the needs of American commerce, but extending as well to the legal questions raised by the proposed legislation.

Upon request of the Committee on Commerce of the United States Senate, a report was compiled and submitted to the Sixty-fifth Congress in connection with bills introduced at that session providing permissive legislation for the establishment of foreign-trade zones. The report has been revised and, upon request, submitted to the Committee on Ways and Means of the House of Representatives.

Bills are pending in the present Congress, before the Committee on Commerce of the Senate and the Committee on Ways and Means of the House of Representatives, and hearings have been held by both committees. This proposed legislation has been carefully drawn. The amendments suggested by the Tariff Commission to the legislation previously proposed have been agreed upon after consultation between members of this commission, officials of the Treasury Department, the Department of Commerce, and representatives of the leading commercial organizations, merchants, manufacturers, shippers, importers, and exporters.

Although not included in the report, the Tariff Commission, upon the request of the Senate Committee on Commerce, filed an informal memorandum with that committee showing conclusively, in the opinion of the commission, that objections to the legislation on constitutional grounds are not well founded.

As a result of this investigation, the Tariff Commission, acting under the provisions of law, recommended the adoption of permissive legislation for the establishment of foreign-trade zones. The building up and maintenance of an American merchant marine and the facilitating of our foreign commerce justify and demand the elimination of unnecessary hindrances and delays incident to the present system of bonded warehouses and drawback, and the adoption of the foreign-trade zone is an alternative and supplementary device.

In this connection acknowledgement should be made of the cooperation of the Department of State, the Department of Commerce, and the United States Shipping Board in securing data concerning foreign and domestic ports, and especially of the Consular Service for reports and documents relative to the spread and administration of the free-port policy in Europe.

DUMPING AND UNFAIR FOREIGN COMPETITION IN THE UNITED STATES.

The commission is empowered, by the act creating it, to investigate "conditions, causes, and effects relating to competition of foreign industries with those of the United States, including dumping * * *." Under this authority the commission in 1918 invited from representative American business firms expressions of opinion and statements of fact on unfair foreign competitive practices in the United States. At the same time the commission also sent a special agent to Canada to examine and report on the operation of Canada's antidumping law, as enacted in 1904 and as amended in 1907. The results of the commission's investigations are set forth in its report on "Dumping and other unfair foreign competition in the United States and Canada's antidumping law," transmitted on October 4, 1919, in response to official request, to the Ways and Means Committee of the House of Representatives.

By reference to existing antidumping legislation of the United States, Canada, Australia, and the Union of South Africa, the report makes clear that dumping is generally regarded as occurring whenever there is a sale of imported merchandise at less than its prevailing market or wholesale price in the country of production. The report distinguishes this usage from other commercial practices commonly considered unfairly competitive, and contrasts with the latter practices simultaneous sales at

home and abroad and ordinary low-priced sales, which, in the absence of some unusual and unfair advantage, are generally deemed proper features of successful competition. The commission indicates that tariff impositions naturally express the degree to which Congress intends that ordinary forms of successful foreign competition shall be sanctioned. It is pointed out that, in the field of unfair methods, this country has various legislative enactments, including those offsetting the effects of foreign grants and bounties through countervailing duties, restricting the practice known as "full-line forcing," and penalizing undervaluation in making entry of imported goods.

In the light of its investigations the commission also scrutinizes in its report the antidumping enactment of Congress of September 8, 1916, which provides both for punishment and civil liability for damages in cases where goods are commonly and systematically imported or sold in the United States at prices substantially less than their actual market value or wholesale price at the time of exportation, with intent to destroy, injure, or prevent the establishment of an industry in the United States, or to restrain or monopolize any part of trade or commerce in such articles in the United States.

The report summarizes specific complaints, filed with the commission in the course of its inquiry in the United States, on dumping, severe competition, deceptive imitation of goods, false labeling, deceptive use of trade-marks, and undervaluation. The difficulty of proving dumping, without the aid of governmental machinery particularly devoted to its detection, is noted; the economic aspects of dumping are discussed; and the difficulty of proving any definite intention to destroy or prevent the establishment of an industry in the country in which goods are dumped is emphasized.

It is observed that the commission's investigation in Canada on the operation of Canada's antidumping law disclosed the existence of numerous actual efforts to practice dumping in that country during the 15 years in which the Canadian clause has been in force, and that, on the whole, the Canadian provision has served effectively to check such attempted evasions. The report traces the history of the Canadian legislation. It reviews the clause as originally enacted in 1904; the reasons assigned for the legislation; the chief objections to and indorsements of the legislation recorded in the Canadian tariff hearings of 1905-6; and the amendments of 1907, which gave the clause the form it still retains. The methods of administering the Canadian provision are also detailed. Its relatively minor revenue features are shown, and comments by representative observers on its effectiveness are quoted.

In the appendix of the report the existing antidumping enactments of the United States, Canada, Australia, and the Union of South Africa are assembled, and the report itself comments on noteworthy differences between the respective statutes. Certain obstacles to the practical enforcement of the act of September 8, 1916, are considered, and the commission expresses the view that these difficulties somewhat support the contention that administrative remedies are superior to criminal laws in preventing dumping.

On the assumption that the act of 1916 expresses the continuing restrictive purpose of Congress, the commission concludes in its report that sufficient disclosure has been made of the existence of dumping and certain ensuing abuses to warrant added legislation. In this connection attention is directed to the somewhat adaptable statutory and administrative aspects of the Canadian law and to the importance of protecting consumers against legislative enactments of too sweeping or rigid a character. On the side of constructive legislation the report suggests that the act of 1916, if retained, should be revised and strengthened, and that some official body, moving along lines sanctioned by Congress in the Federal Trade Commission act, may reasonably be specifically instructed to deal with dumping as a manifestation of unfair foreign competitive methods. The commission also indicates that in the case of imports bonds providing for the collection of dumping duties subsequently assessed may be useful, and that the President or the Secretary of the Treasury may be empowered to impose additional duties, or even to refuse entry when industrially destructive dumping is proven or impending.

RECIPROCITY AND COMMERCIAL TREATIES.

The Tariff Commission in February, 1919, submitted to Congress a comprehensive report on reciprocity and commercial treaties. This report discusses in detail the reciprocity and tariff experiences of the United States. Among the subjects thus covered are the Canadian reciprocity treaty of 1854, the Hawaiian reciprocity treaty of 1875, the agreements under the tariff acts of 1890, 1897, and 1909, the Brazilian preferential arrangement, the Cuban reciprocity treaty of 1902, and the attempt to establish commercial reciprocity with Canada by concurrent legislation in 1911. The report also

discusses fully the complicated subject of the most-favored-nation clause in commercial treaties and, finally, surveys the tariff systems of Germany, France, and Russia.

The report is prefaced by recommendations with regard to the use of tariffs as a means of preventing discriminations to the disadvantage of American citizens and their products in foreign markets. The recommendations emphasize the principle that "the United States should ask no special favors and should grant no special favors," and that "it should exercise its powers and should impose its penalties not for the purpose of securing discriminations in its favor but to prevent discriminations to its disadvantage." The commission recommends the enactment of legislation authorizing the imposition of additional or penalty duties by proclamation of the President on imports from countries not according to the United States the same treatment accorded to other "most-favored" nations.

The report maintains that it should be the policy of our Government to offer equality of tariff treatment to all who grant like treatment to the United States and its products, and to penalize with a higher tariff those countries which refuse us equality of treatment. It urges that in order to obtain the desired flexibility Congress should define in general terms the kind and degree of unequal treatment which is to be penalized, but should leave to the President the application of the law to particular cases. The mere possibility of the imposition of maximum or penalty duties will tend to secure equality of treatment for the United States and its products without formal action. By virtue of the need for prompt and effective action it also points out that when agreements within the provisions of the law are entered into further ratification by the Senate or approval by Congress should not be required.

As a result of the commission's exhaustive review of the subject the following additional constructive legislative suggestions may be made. The law should be sufficiently inclusive to enable the President to penalize not merely open discriminations, but also discriminations more or less concealed in customs regulations, transportation rates, sanitary provisions, or even in classification where the effect is to place American products at a serious disadvantage. Congress should enumerate the articles or commodities upon which additional duties may be imposed and should specify the maximum increases which may be made in such duties as penalties for discrimination. Two considerations should be borne in mind: First, a variety of products should be named, selected with the view of inflicting in operation a genuine penalty on foreign countries discriminating against us, with the minimum injury to American consumers, and, second, those products should be chosen which are imported in substantial amounts from more than one source in order that the imposition of the additional duties on imports from the country to be penalized may result in a diversion of that trade to another country without great inconvenience to importers and consumers in the United States. An imported commodity, which is also produced in large amounts in this country and the production of which could be increased, would be suitable for the list, even though it were imported from a single country.

Having enumerated the articles and specified the maximum penalty duty Congress should leave the President wide discretion in administering the law within these limits. The necessary flexibility can not be obtained unless the President has power to proclaim, at his discretion and without further action by Congress, the maximum tariff on any or all of the articles enumerated in the law, or to impose such additional duty up to the maximum authority in the law, as the circumstances may require. Many discriminations can not be reached at all unless in the administration of the additional tariff thus provided the penalty can be fitted to the offense.

The enactment of such an additional tariff schedule need not wait upon the general revision of the tariff law. The protection of our commercial interests requires prompt action.

Before the larger task of a general revision is taken up Congress may provide an effective means of enforcing equality of treatment for the United States and its products in foreign markets. It may enact a law providing that the free list and the dutiable list of the present tariff act shall constitute the minimum tariff of the United States and that the rates fixed shall be applicable to the products of all countries except in those cases in which the President shall ascertain that any country or subdivision thereof, whether by law or administrative measure, imposes tariff rates, discriminatory provisions, regulations, or other exactions unfavorable to American commerce which are not equally applicable to the commerce of all other countries. The law may then establish a maximum tariff, enumerating the articles it shall cover, fixing the maximum duties, empowering the President within the limits of the law to determine the articles to be penalized and to fix and apply the amount of the duties in each particular case, with further authority to withdraw the penalty duties as circumstances may require.

SUMMARY OF INVESTIGATIONS DURING THE YEAR.

INTERNATIONAL TARIFF RELATIONS AND COMMERCIAL TREATIES.

Section 704 of the act creating the Tariff Commission provides that—

The commission shall have power to investigate the tariff relations between the United States and foreign countries, commercial treaties, preferential provisions, and economic alliances.

Under this authorization investigations were begun, both in connection with the peace conference and at the request of the Ways and Means Committee, into various subjects, including colonial tariff policies, commercial treaties, and reciprocity with Canada. The three investigations named have been completed and the information has been published or is in process of publication.

TARIFF POLICIES FOR DEPENDENT COLONIES.

Part I of the report on colonial tariff policies includes a survey of the colonial tariff policies of France, Germany, Italy, Spain, Portugal, the Netherlands, Belgium, Great Britain (Crown Colonies and India), Japan, and the United States. These are treated separately, and in each group of colonies the description of tariff policy is preceded by a survey of the population, products, trade, government, methods of tariff making and other relevant information bearing on colonial conditions. The United States, Japan, France, Portugal, Italy, and Spain are to-day giving their own goods substantial preferences in their colonial markets. Belgium and the Netherlands maintain the "open door" in their colonies. With a few exceptions the door remained open also in the British Crown Colonies and in India until the past year, when differential import or export duties were imposed or largely increased in various colonies. These duties, following upon the preferential tariff introduced a year ago in the United Kingdom, suggest the possibility that the Government at present in power in Great Britain may favor the use of tariff differentials to promote the growth within the Empire of much of the trade hitherto carried on by the different members of it with foreign countries.

The introductory chapter of this report describes the characteristics of colonial trade, summarizes and compares the colonial tariff policies of the powers, notes the existing open-door treaties and directs attention to a tendency toward more pronounced discriminatory regulations.

Part II of the report on colonial tariff policies reviews preferential tariffs in Great Britain and the British self-governing dominions. Canada, Australia, New Zealand, and South Africa have for some years granted to Great Britain and to some other parts of the Empire preferential tariff treatment, and recently Great Britain has enacted preferential duties on a limited list of colonial products. The relations of Canada to the West Indies receive attention and the provisions of their trade agreements of 1912 and 1920 are given. An historical study of the development of this movement toward a preferential system has been made for each of the five dominions and

for Great Britain. The forces favoring the movement and the arguments urged for it are set forth in relation to the successive steps in the application of the policy.

COMMERCIAL TREATIES.

The commission has completed and has nearly ready for publication a digest of commercial treaties. It includes not only the commercial treaties of the United States with other countries, but also commercial treaties, conventions, and tariff agreements which were in force between all nations at the outbreak of the European war in 1914, and others which have been concluded since that date. It makes accessible for the first time within the compass of a single volume and in the English language a summary or synopsis of the stipulations contained in the world's commercial treaties.

The work is arranged by topics under various heads. It shows, for instance, between what countries, and in respect to what matters, most-favored-nation or national treatment is stipulated; i. e., in what countries aliens are entitled to the same treatment as native citizens in affairs of commerce, navigation, industry, the administration of justice, taxation, the acquisition and disposal of property, and numerous other matters of international agreement. The full text of a given treaty or of any of its stipulations will readily be found through the citation, by volumes and sections, of authentic texts in the various languages.

An introduction to the work sets out the established principles of international law in the negotiation and operation of treaties; explains their technical terms, and shows the effect of the treaty of peace of Versailles on existing commercial treaties.

Most Governments have published official compilations of the texts of their international agreements, and several general collections of such texts are available; but no analysis or synopsis of their provisions has ever been published, even for the treaties of a single nation. In this field, therefore, the commission's volume is unique.

CANADIAN RECIPROCITY.

A report on Canadian reciprocity has been prepared at the request of the Committee on Ways and Means. The contemplated revision of the tariff of the Dominion of Canada lends interest to the survey of this question.

The report outlines the events leading up to the reciprocity treaty which was in force between the Canadian Provinces and the United States from 1855 to 1866, and its effects; Canadian efforts after it was abrogated toward the enactment of a similar treaty; the campaign in the United States for the adoption of reciprocity following the tariff act of 1909, which led in 1911 to the enactment of certain tariff concessions toward Canada, conditioned (except in the case of wood pulp and printing paper) on the passage of concurrent legislation by the Dominion Parliament; the defeat of the measure in Canada; an analysis of the agreement of 1911, and its probable effects both then and at a later date had it gone into operation. Special emphasis has been laid upon the economic and political

conditions in the two countries as explanatory of events and of the nature of the agreement.

The analysis of the effect which the agreement would have had if adopted (1) at the time drawn up, and (2) at a subsequent date, takes the form of statistical comparison and interpretative comment. For the first date the trade figures were taken for 1910, and the proposed rates applied to the movement of goods between the two countries. The value of imports into the United States from Canada which would have been put on the free list or reduced in duty was \$43,000,000; of those in the opposite direction, \$33,500,000. The proportion of trade affected would have been, however, very different for the two countries; of imports into the United States from Canada, 45 per cent would have been changed, five-sixths of these going on the free list, the remaining sixth being reduced in duty; of imports into Canada from the United States, 15 per cent would have been changed, one-third of these being made free, two-thirds reduced in duty. In the second comparison, trade figures for 1918 are used. The changes which the adoption of the treaty would make under the rates now in force differ from those just given, most markedly so in the case of imports into the United States. For Canada the rates taken are those in force since May 19, 1920, not considering the excise taxes laid by the Dominion Parliament and enforceable upon imported goods as well as those made in the Dominion. Imports into the United States from Canada which would have been affected amounted to \$31,000,000; those in the opposite direction, to \$126,000,000. The proportion of trade affected is not so markedly different as in 1910: Of imports into the United States from Canada, 7.2 per cent would have been affected, all but one twenty-fifth of these being made free and that twenty-fifth reduced in duty; of imports into Canada from the United States, 16 per cent would be affected, one-fourth of these going on the free list the remaining three-fourths being reduced in duty. Therefore, under the agreement the United States would to-day be granting a less concession to Canada than at the time proposed, Canada a somewhat greater one. The difference in effects is due to a great extent to the fact that the tariff of the United States has undergone a wide revision while the tariff of Canada has not. A second cause for the difference lies in the large increase in the value of the trade between the two countries since the outbreak of the war in Europe, an increase largely attributable to the rise in prices, although to some extent to an increase in commodities.

The articles which would be specially affected to-day by the proposed rates are flaxseed, oats, hay, and barley. Potatoes and wheat, although more important in the trade, are now free of duty into both countries. Barley is not of great importance. The greater part of the imports of hay into the United States from Canada goes to the northeastern sections of the country, since the transportation costs for such a bulky commodity are high. As to oats, it may be noted that a portion of Canada's production is of fine grade, suitable especially for the manufacture of rolled oats. Although Canada produces only one-third as much as the United States, her annual exports are greater. With the present United States duty of 6 cents per bushel, which is more than the prewar freights from Montreal to England, the bulk of the exports goes to Great Britain, except in

years of crop shortage in the United States. The removal of the duty, as contemplated in the reciprocity agreement, would result in increased imports and in increased returns to the Canadian farmers, although it would not greatly affect general oat prices in the United States. Flaxseed is now the most important dutiable article which would have been made free by the reciprocity agreement. It is essentially a frontier crop, the cultivation of which is now being extended rapidly in the prairie Provinces of the Dominion. It is not profitable when raised continuously on the same ground, is not a "weed fighter," and for these and other reasons is not a popular crop with the farmer. The present United States duty is 20 cents per bushel, equivalent to $6\frac{1}{2}$ per cent ad valorem on the 1918 imports. One-half of the United States requirements is imported in spite of this duty. Canada's surplus has not been sufficient to meet the growing American shortage, and Argentina has become the chief source of foreign supply. The most marked effect which would result from the removal of the duty would be an increase in the price the Canadian grower would receive rather than a reduction in the American price.

THE WOOL-GROWING INDUSTRY.

The Tariff Commission has continued its study of conditions in the wool-growing industry throughout the world, and its report on the subject is in process of publication. This will supplement work done by the Tariff Board appointed by President Taft and will bring up to date the facts in regard to international competition in the production of this important raw material.

The problems and difficulties of domestic woolgrowers have been considered in detail. The woolgrowers have been passing through an extremely trying period of readjustment from war conditions, and it is of special moment to ascertain if possible what are the permanent and what the temporary factors in the present situation. In Australasia, South America, and South Africa large amounts of wool were left over from war-time stocks, and the existence of these stocks has undoubtedly had an influence in producing the depressed state of the wool market during the summer of 1920. A fall in prices was expected soon after the armistice, but throughout 1919 and the early months of 1920 the great demand for fine wools kept up the prices of the finer grades.

The cancellation by clothing manufacturers of orders for cloth, due partly to restriction of credit, but mainly to the refusal of the public to pay the high prices asked for clothing, brought about a peculiar situation in the wool market in May, 1920. It could hardly be termed a collapse of wool prices, but was rather an entire obliteration, for a time, of the market for the domestic clip. Some sales had been previously consummated at approximately the 1919 prices; then suddenly wool could not be disposed of at any price. For several months there was hardly enough trading in wool to establish a scale of prices. Some clips were sold on a basis not greatly below the old price range, but the volume of business was very small, and the greater part of the 1920 domestic clip was stored. Representatives of all branches of the trade and of banking interests, both eastern and western, met with the Federal Reserve board in June and sought financial relief for the growers. The Board recommended that the

local banks extend aid to the growers by means of trade acceptances, secured by bills of lading or warehouse receipts. Some growers were financed in this way, some consigned their wool to dealers, frequently on an advance of 15 to 30 cents a pound, while others, better situated financially, merely put their wool in the warehouse and awaited developments. The summer of 1920 was a period of uncertainty in all branches of the trade, from grower to manufacturer.

These have been the recent developments, but there are many "long-run" tendencies which have required painstaking study and these are treated with care in the report. Costs of production have been investigated and as definite figures have been presented as were practicable in an era of such rapidly changing conditions. A thorough investigation was made of the status of wool production in the "fleece" or farming States. Particular attention has been paid to the influence of competitive farm enterprises on sheep and wool, as distinct from competition with foreign woolgrowers. The organization of the range industry, as affected by agricultural developments in those areas, and its relation to the Government's policy for utilization of the public domain, has been given special consideration. A detailed study was made of the methods of sheep and wool marketing. Reports on conditions in foreign countries have been received from consuls and special experts abroad, and the report contains information on the industry in all the leading woolgrowing countries.

The field covered is necessarily large, but the commission has sought to eliminate from the report all details which are not pertinent to an understanding of the relation of the tariff to the production of wool in the United States.

SPECIAL EXPORT AND IMPORT RAILROAD RATES AND OTHER PREFERENTIAL TRANSPORTATION RATES.

The act of Congress creating the commission authorized it to investigate, among other things, "the effect of export bounties and preferential transportation rates."

It has long been the policy of the railroads of the United States to accord lower transportation rates on certain imported and exported articles than are charged on similar commodities of domestic origin and use. These special rates were terminated during the period of Government operation of the railroads and, with limited exceptions, they have not been restored at the North Atlantic ports. At the Gulf ports, however, and to some extent at the South Atlantic, and also in large degree at the Pacific ports, special railroad rates are again granted on exports and imports. These special rates by American railroads have enabled commodities to be handled under more favorable conditions in the foreign trade of the United States, and it has been assumed that in the case of imports one effect of the reduction in charges was to offset in part the effect of customs duties.

The commission has in progress a thorough investigation of special or preferential transportation rates by railroads not only in the United States but also in foreign countries and by carriers upon the ocean, in order to determine what relation, if any, such rates may have to the tariff. The report based upon this investigation will show what special rates are in force in the United States, and will contain an account of the ocean rates on American imports and ex-

ports, with special reference to preferential rates on the ocean that may result from export bounties granted by foreign countries. It will also furnish information in regard to special export railroad rates in force in foreign countries and will, in general, set forth, as fully and as definitely as possible, the relation of preferential ocean and rail transportation rates to the customs duties imposed by the United States.

The importance of this investigation has been increased by the provisions of section 28 of the merchant marine act, approved June 5, 1920. It is provided in that section:

That no common carrier shall charge, collect, or receive, for transportation subject to the interstate commerce act of persons or property, under any joint rate, fare, or charge, or under any export, import, or other proportional rate, fare, or charge, which is based in whole or in part on the fact that the persons or property affected thereby is to be transported to, or has been transported from, any port in a possession or dependency of the United States, or in a foreign country, by a carrier by water in foreign commerce, any lower rate, fare, or charge than that charged, collected, or received by it for the transportation of persons, or of a like kind of property, for the same distance, in the same direction, and over the same route in connection with commerce wholly within the United States, unless the vessel so transporting such persons or property is, or unless it was at the time of such transportation by water, documented under the laws of the United States.

This prohibition of a lower rate by American railroads on import and export traffic in foreign vessels than on similar domestic traffic is subject to the proviso that the Interstate Commerce Commission, upon request of the United States Shipping Board, may suspend the enforcement of the section. Such request has been made, and the Interstate Commerce Commission has accordingly suspended enforcement until the 1st of January, 1921.

By setting forth the extent to which special import and export railroad rates are granted in this country and by explaining the reasons for them, the Tariff Commission hopes to make it possible to measure more definitely the effect of the policy established by section 28 of the merchant marine act.

It is expected that this investigation of special transportation rates and the relation to them of foreign export bounties will be completed during the present calendar year and that the report based upon it will be finished early in 1921.

INDUSTRIAL READJUSTMENT OF CERTAIN MINERAL INDUSTRIES AFFECTED BY THE WAR.

The disturbances caused by the war resulted in profound changes in the sources of supply of certain minerals and an extraordinary expansion in demand. The readjustment of these industries to peace conditions has in many cases been extremely slow and difficult. During the war period domestic deposits were called upon for extraordinary production. In the case of certain minerals the productive capacity of this country enabled American producers to extend the scope of their operations sufficiently to meet the increased demand which arose without materially raising the unit cost of the additional output. But in the case of other minerals larger supplies could be produced only at costs far exceeding those which obtained before the war. Following the cessation of hostilities the demand for a great number of minerals and metals throughout the world subsided. For-

foreign supplies obtainable at relatively low prices, as compared with the cost of production from the newly utilized domestic sources, were thrown in growing quantities on the American market, whose absorptive capacity was suddenly reduced. Prices then quickly responded to a discrepancy between the lessened demand for minerals and the larger supply due to resumption of foreign shipments, with the result that much of the development of domestic mines proved unprofitable, and in many cases even accumulated stocks could not be sold.

This abnormal condition focused attention upon a group of minerals, many of which had, prior to the war, been considered as of minor importance. A certain amount of relief was afforded in the case of tungsten, manganese, pyrites, and chromite, by the war minerals relief act, under the terms of which a financial indemnity was given to investors who had developed deposits for the production of these minerals. It was further proposed that the Government give a direct bounty to producers of certain essential minerals and metals. Regional freight rates on Government-controlled railroads, as well as tax exemptions of various sorts, were also suggested. In order to exclude foreign supplies, embargoes were advocated and several bills were introduced in Congress for higher duties so as to protect domestic producers. None of these projected measures, however, was adopted.

In general it may be observed that Congress has apparently declared against any policy of liquidating investment losses by means of tariff duties, but in the case of several minerals there is active interest in the possible protection of certain of these war-stimulated industries by means of import duties sufficient to offset the difference between the cost of the domestic mineral delivered and that of the competing foreign product. In view of the apparent interest in these minerals and metals, the commission has prepared for ready reference, a publication covering the following commodities: Antimony, chromite, graphite, magnesite, manganese, potash, pyrites, sulphur, quicksilver, and tungsten.

The conditions of supply and demand and the degree of readjustment to peace-time conditions vary widely among the different minerals in this group. A general classification which will combine these minerals into groups in which the competitive status of the American industry is identical is impossible. The commission's report, therefore, after briefly pointing out the general situation, consists of individual discussions of the after-war aspects of each of the minerals. These may be briefly summarized as follows:

Antimony.—Antimony is a metal entering, as an alloy with lead and tin, many lines of industry in times of peace. It is of military importance as a hardening constituent of shrapnel bullets. Present supplies are derived largely from great high-grade deposits in China, although some ore may be made available from Bolivia, Mexico, France, and Spain. The known ore resources of the United States are slender. There was some development of antimony smelting in the United States during the war, but with the falling off in the demand the after-war supplies are now imported almost exclusively in the form of metal smelted in China or Japan.

Chromite.—The ore from which the chromium required by the steel industry and the chromium salts used in the chemical and paint

industries are obtained was imported before the war from New Caledonia, Rhodesia, and Asia Minor. A great number of domestic deposits were opened up during the war, producing a sufficient quantity to satisfy the domestic needs. The deposits, however, were small and scattered, and the ore was generally not so readily accepted by the ferrochrome producers as the more uniform grades obtained from large foreign sources. As soon as Rhodesian and New Caledonian ore was again obtainable it was eagerly sought by reduction plants in preference to the sporadic production from small domestic mines. The supply of foreign ore is generally more dependable and is offered at prices too low to permit the successful operation of most of the American mines.

Graphite.—This mineral is of wide industrial utility, but important principally as material for the manufacture of crucibles used in the melting of various metals, although there is considerable consumption of inferior grades for the manufacture of pencils, lubricants, etc. Chief interest centers in the crystalline material of crucible grade, which prior to the war was supplied mainly from Ceylon and Madagascar. During the war a domestic flake graphite mining industry sprang up, especially in Alabama, and promised to furnish an adequate quantity at somewhat higher prices than the prewar quotations for foreign material. Crucible makers assert that the domestic flake graphite is not so satisfactory as that obtained from Ceylon, and since ocean transportation has improved, the American material is sold with difficulty and at lower prices than that obtained from abroad.

Magnesite.—Austria formerly supplied almost the entire American consumption of magnesite for linings of steel furnaces and for other refractory uses. In California there was a small output of magnesite, used chiefly in the manufacture of plastic material (Sorel cement) for walls and floors. For this purpose, as well as for making chemical and medicinal preparations, Grecian magnesite was more commonly used. Before the war 95 per cent of the domestic supply of magnesite was derived from the Central Powers. Following the cessation of ocean shipments, as a result of the war, the domestic magnesite industry expanded from its insignificant prewar status until it is now able to satisfy any probable home requirements. Two large companies operating in the State of Washington, and some seven smaller plants in California contributed to the 162,000 tons produced in 1919. Since the domestic quarries are all situated on the Pacific coast and the chief consumption is in the East, transportation is an important factor. On account of the high cost of rail delivery, the steel works have resorted to the use of burnt dolomite. While magnesite can not be wholly replaced by the lime-bearing material, the use of dolomite has made serious inroads into the former market. With the return to normal shipping conditions and the resumption of active production in Central Europe metallurgical plants in the eastern part of the country may be expected to obtain their magnesite supplies from Austria, Greece, and Canada. This would leave for the American magnesite producers only the western market, which is relatively small and which consumes chiefly the caustic variety in the form of plaster.

Manganese.—Prior to the war practically the entire domestic requirements of this metal, which is essential to the steel industry,

were imported. Domestic production of manganese ore rapidly increased during the war from 3,000 to 300,000 tons annually, the latter figure almost equaling the normal requirements. Domestic deposits, however, are low grade and scattered and are manifestly powerless to compete with the natural, relatively high-grade deposits of Russia, India, and Brazil. Since the war domestic mines have been shut down, although the ferromanganese smelting industry, also largely a war development, has been revived in recent months, operating largely on imported ores.

Potash.—This element is a necessary agricultural fertilizer. Germany, which possesses the world's richest deposits, had for many years furnished the main supply. When this source was cut off, prices in the United States rose to extraordinary levels, which fostered the development during the war of a productive capacity sufficient for almost one-half the domestic needs. Much of the American output, however, can be maintained only at high cost and can not meet the competition of imported salts.

Pyrites and sulphur.—The most essential use of pyrites and sulphur is as raw material for the manufacture of sulphuric acid. Sulphur is also used in the paper-pulp industry. Domestic resources of both these minerals are ample to meet any probable requirements. Spanish pyrites was imported in large quantities before the war, but the competition which domestic pyrites producers now face comes rather from the sulphur production in Texas and Louisiana. Prior to the war sulphur was little used in sulphuric acid manufacture, but has now displaced pyrites in many plants. The prices of sulphur have now come down to levels which do not permit the successful operation of domestic pyrites mines. There is a continued importation of Spanish pyrites which, in addition to furnishing sulphur may be utilized, after treatment in the sulphuric acid works, as a source of copper and nonphosphoric iron ore. It seems that these by-products are sufficiently valuable to allow the sulphur content to be practically given away. The utilization of this foreign pyrites employes a considerable amount of American labor and introduces a further element of competition to domestic sulphur mining companies who have conducted a price war among themselves after practically eliminating the domestic pyrites producers.

Quicksilver.—This metal is an essential constituent of all detonators for high explosives and is of great military and industrial importance. During the war ample supplies were obtained from American deposits, but these are notably low grade, averaging less than five-tenths of 1 per cent metal content. Spanish quicksilver derived from ores carrying upwards of 8 per cent metal is abundant, and Austrian and Italian quicksilver can also be produced at much less cost than the American output. European quicksilver can readily supply American demands at prices far below domestic costs.

Tungsten.—This metal has come into extraordinary importance in recent years as the hardening element in high speed tool steel, which considerably increases the efficiency of labor and machines employed in cutting metals. American mines are developed to the extent of producing nearly one-half the national requirements, but almost without exception have been idle since the cessation of hostilities, owing to decline in prices to below costs of production. Considerable stocks were accumulated and have not yet been materially dis-

bursed. While the American product is of better quality than most of the imported material, its value is only \$1, at most \$2, greater than imported ore, which is now sold in New York at between \$4 and \$5, or only about one-third the cost of production at domestic mines. The chief current supplies are derived from southern China where large deposits have been found.

COOPERATION WITH THE SENATE AND HOUSE.

SPECIAL SERVICES RENDERED THE SENATE FINANCE COMMITTEE ON THE DYE BILL (H. R. 8078).

During the hearings before the Senate Finance Committee and consideration by the committee of this bill on coal-tar products the Tariff Commission, at the request of the committee, submitted several memoranda on administrative features of the bill in regard to amendments proposed. In all cases the commission submitted the required information without taking an attitude toward the policy of the proposed measure.

On December 19, 1919, the commission submitted a detailed memorandum calling attention to previous published reports of the commission on the industry under consideration, and also discussed amendments proposed to the bill during the hearings, many of which related to products not of coal-tar origin and therefore outside the intended scope of the bill.

Letters of February 3, February 20, and March 20, 1920, were forwarded to the committee in response to requests for additional information in regard to certain administrative features of the bill and proposed amendments. Members of the commission and its staff were also called into consultation with the committee in executive session to discuss and supply at first hand desired information in regard to the bill.

While this bill was before the Senate Finance Committee the commission completed an investigation of costs in the dye industry. This information was made available to the committee and members of Congress in a report entitled "Costs of Production in the Dye Industry, 1918 and 1919," which is discussed on page 34.

COMPILATIONS FOR THE HOUSE COMMITTEE ON WAYS AND MEANS.

Two reference books have been prepared for Congress at the request of the Ways and Means Committee, respectively, entitled "Summary of Tariff Information, 1920," and "Statistics of Imports and Duties, 1908-1918, Inclusive."

Summary of tariff information.—This volume, under the title "Summary of Tariff Information, 1920," gives information and economic data as to the several thousand commodities embraced in the tariff. This information includes a description of the commodity, its various uses, the methods and circumstances of its production, significant conditions as to the foreign competition, as well as significant changes of imports and the latest available information as to exports, with special reference to the experience immediately preceding the war. Finally, under the caption, "Interpretation and comments," appear pertinent decisions of the Treasury Department,

of the Board of General Appraisers, and of the courts. Under this head also appears a statement of certain inconsistencies and inequalities referred to in the commission's second annual report on pages 34 and 35, as follows:

The investigations of the commission in various directions have brought to its attention inconsistencies and inequalities of various kinds in the texts of the tariff laws as they now stand. The classification of commodities is sometimes illogical. Duties upon finished products are not properly proportioned to the duties upon raw materials. The same or similar articles are mentioned in different paragraphs, causing uncertainty to arise as to the rate of duty to be imposed. With the accumulation of information on items of this sort the commission has undertaken to systematize the material and to be prepared for an eventual simplification and smoothing of the language of the statute. This task is closely connected with that of the revision of the customs administrative laws and of taking cognizance of the interpretation of those laws by the Board of General Appraisers, the Treasury Department, and the Court of Customs Appeals.

While neither rates of duties nor tariff policies are discussed in this work, the commission has endeavored, in the light of executive and judicial construction, and in view of indefinite and inharmonious provisions of the tariff acts, to place before Congress by way of comments such facts as may aid in tariff revision.

There also appears in Volume I the tariff act of October 3, 1913, arranged in parallel columns with the tariff act of August 5, 1909, both being supplied and arranged by Mr. Ernest W. Camp, clerk to the Committee on Ways and Means.

Statistics of imports and duties, 1908-1918.—This volume is a compilation, alphabetically arranged, of the imports entered for consumption as itemized in the annual reports of the foreign commerce and navigation of the United States by the Department of Commerce. The period covered is the fiscal years ended June 30, 1908, to 1918, inclusive. The statistics show the quantities, values, value per unit of quantity, duties collected, and rates of duty, to which the commission has added the equivalent ad valorem rate of duty for each commodity imported under the general tariff laws of 1897, 1909, and 1913, the war revenue act of 1916, and special acts, treaties, and reciprocal agreements.

Dictionary of tariff subjects.—The need for the collection into organized form of the varied data and sources of information on tariff subjects has been generally recognized. There has been hitherto no such unification of matter relevant to the subject. The commission has in progress such a work which it contemplates presenting in a single volume and in accessible dictionary form.

Each subject will receive basic treatment giving the substance and circumstances of major importance as clearly and fully as dictionary conciseness will permit. First-hand information will be given. This aid has hitherto been denied the student or investigator of tariff subjects, and the work should fill a widely apparent need.

An important feature of the work will be adequate direction to the sources of further information for each subject treated, in the form of cross references and a bibliography through which the investigator may pursue his inquiries to any length desired.

INVESTIGATIONS IN FOREIGN COUNTRIES.

A SURVEY OF THE BRITISH WOOL-MANUFACTURING INDUSTRY.

During 1919 the commission conducted an investigation in Great Britain and published the results under the above title. Effort was made to secure an intimate view of the industry as at present organized, to ascertain the temporary conditions affecting wool manufacture in Great Britain as well as those factors likely to be of permanent influence, and to ascertain with such accuracy as was possible the difference between costs of production in that country and in the United States.

Particular attention was given to cloths and dress goods and their constituent elements of top making, yarn spinning, and the like. The West Riding of Yorkshire was the region chiefly studied. The amount of time needed for such study prevented more than passing attention to less important branches, such as the manufacture of carpets and knit goods, and to wool manufacturing in the smaller and more scattered districts.

The organization in Great Britain of the two branches of wool manufacturing—worsted and woolen—is strikingly different. The worsted industry shows the widest differentiation of production; it is typical of this industry that the material is sold and resold in its various forms as the stages of manufacturing are completed. It first enters the market as wool; next appears as tops with the resulting noils and waste, after having been combed on commission for the top maker; then as spun yarn; then, though less often now than formerly, as cloth "in the gray"; and finally as dyed and finished cloth. In the woolen industry the tendency has been toward integration—that is, the woolen mills for the larger part carry through all the stages of production in the same establishment. Great Britain shows more worsted spindles than the United States by nearly 50 per cent, more looms by 40 per cent, but more woolen spindles by only 13 per cent.

The report compares the machinery and processes used in Great Britain and the United States, outlines the growth in the British industry toward combination, both between establishments in the same process of manufacturing and establishments engaged in successive steps in production, and points out the fact that governmental control of the industry has left it more thoroughly organized than formerly.

The report covers wages, costs, and prices. The British wage scale now consists of two parts, (1) the basic rate, representing prewar wages, and (2) a "cost of living wage" in addition, based on the index figures of the cost of living as published in the Labour Gazette. In many important cases the increase since 1914 has been greater than the rise in living costs, and the proportion which wages represent of the total cost of conversion is greater now than in 1911 when such figures were compiled by the United States Tariff Board.

An indication of differences in cost of the different stages in manufacture in the United States and Great Britain is to be found in the commission rates charged for the work. In 1911 the Tariff Board reached the conclusion that the cost of converting wool into tops was 80 per cent higher in the United States than in England; of convert-

ing tops to yarn, 100 per cent higher; of turning yarn into cloth for "a variety of fabrics," 100 to 150 per cent higher. Figures in this report indicate that the first percentage in 1919 was 40, the second 80, the third below 100, perhaps as low as from 60 to 80. To some extent the English costs, on which the present comparison is based, are likely to be temporary, influenced as they are by a number of fluctuating and doubtful factors.

In the matter of prices the American and British markets were found to be on much the same basis. A comparison of the prices of cloths, for instance, showed a general similarity; in some cases the English prices were higher than the American, a condition appearing in no case in the similar comparison made by the Tariff Board in 1911. In fancy worsteds and woollens the English market prices show the greatest reduction below the American.

SILK PRODUCTION AND MANUFACTURE IN EUROPE.

The commission has collected information on various industries, including silk production and manufacture in France, Italy, and Switzerland. The aim has been to secure, as far as possible, data comparable with those obtained in this country.

Special attention has been given to the gathering of information concerning raw silk and the changes that have been brought about by the World War. Data have been procured as to the production of cocoons in the various countries and regions; raw-silk production and trade; number of reeling establishments; and reeling wages and hours.

In regard to silk manufacture, the purpose has been to ascertain what change, if any, has occurred in conditions of international competition since 1914, and to learn the present status of the various branches of the industry in Europe compared with those in America as to character of product, technical efficiency, and conversion costs. European piecework wage scales and commission price lists for throwing, weaving, dyeing, and finishing have been obtained. In addition individual manufacturers in Europe have furnished data as to average hourly wages in 1914 and 1919, and more or less complete data as to wages and other costs of production on a number of specific fabrics of which samples were furnished. The investigation is not completed, but the indications are that sufficient price and cost data will be obtained to enable the commission, in spite of general differences in the classes of fabrics manufactured in Europe, to draw closer comparisons than have hitherto been obtainable.

BRITISH METAL AND CHEMICAL INDUSTRIES.

The commission in the fall of 1919 sent a special expert to Great Britain with instructions to investigate certain metal and chemical industries in such detail as might be possible. The work resulted in the collection of a considerable amount of data on these industries. Wages were ascertained for a variety of trades, and production data and estimated exportable surplus were secured on electrical manufactures, certain classes of machinery, many hardware articles, the brass trades, ferroalloys, nonferrous metals, and iron and steel. Conditions of production, sources and supplies of raw materials, equipment

and organization, quality of product, and prices obtaining in the above industries were investigated. Owing to the fact that conditions were not considered sufficiently stable, no extensive cost studies were made, although where such data were obtainable they were secured. Attention was given to market conditions and supplies of asbestos manufactures, dyes, and chemicals, but these industries could not be covered in detail. Data were obtained as to the cost of coal and other fuel in various sections and electric power rates and supply were carefully investigated.

The chief objects of this investigation were to determine the probable character of British competition in American markets, and what metal and chemical products may be expected to enter Anglo-American trade, and to prepare the way for more intensive investigations when normal conditions become established. In general the investigation indicated that in spite of the advantage to the United States of depreciated exchange, British manufacturers would be unable to compete as actively in the United States in 1920 as they did before the war. British prices for the commodities investigated were frequently higher than American and almost invariably above levels that would permit exportation to this country. British manufacturers are adopting American methods of production, and the movement toward standardization of product and specialization in output has made rapid progress since the war. The war brought rival manufacturers into closer touch with one another, with the result that associations and actual consolidations are the outstanding features of the industrial situation. Under the stimulus of extraordinary demands for practically all classes of goods both at home and in the colonies, British manufacturers have been able to improve and extend their equipment to a remarkable degree. The hostility of the workers to the introduction of labor-saving machinery has been largely overcome. Average wages in these trades have increased approximately 130 per cent as compared with prewar standards, while the hours of work have been reduced from 54 or more to 47 or 48 hours per week. It is safe to say that the introduction of machinery to replace hand labor has been generally sufficient to offset the shorter hours except in the mines and in the iron and steel trades.

From present indications the costs of production of bulk lines of iron and steel, engineering products generally, many classes of hardware, and brass goods promise to be nearly the same in Great Britain and in the United States. The exchange of such goods between the two countries will be dependent upon individual rather than upon general conditions and the trade will consist almost wholly of specialties. British wages in these trades seem to be nearly established at approximately one-half those obtaining in the United States for similar classes of work. Fuel and power costs in England are likely to be established at two to three times higher than costs in the United States. Raw material prices may be expected to be on more nearly the same levels in the two countries than they were before the war. These factors indicate that the increased use of machinery in England will fall short of that in American plants, and in any event it will take a long time for English managers to gain the same conception of output and production in the large-scale units that have been achieved in the United States where the home market is larger. In the case of many unstandardized lines British manufacturers may be

expected to have an advantage because of more flexible production methods in smaller works. On the other hand a possible illustration of the situation is furnished by two of the American watch companies which are manufacturing component parts in the United States for assembly in England for the European trade. In the automobile industry, the Ford Co. and a branch of the Willys-Overland Co. have established English works for supplying the British market, importing a considerable percentage of their components from their American factories, and the Rolls-Royce Co. has established an American factory for the production of cars sold in the United States. A similar policy has been adopted by other American firms doing a considerable business in the two countries.

A particularly gratifying aspect of the investigation was the reception accorded the commission's special agent and the assistance extended by American consular agents, British Government employees, manufacturers, and officers of the various trade associations and chambers of commerce.

INDUSTRIAL INVESTIGATIONS IN JAPAN.

During the last fiscal year the commission sent two special experts to Japan. The results of their investigations are now in process of publication.

Japan's favorable position during the World War was found to have given a strong impetus to her growing industrial development and to the expansion of her foreign trade. She was called upon both to supply the domestic needs for commodities formerly imported, and to meet the demands of other countries, particularly those of the Orient, for goods which were not procurable from their prewar sources of supply in Europe. Her war-time development therefore took the double form of expansion of old industries and the establishment of new ones. The new developments among the major industries were most marked in the chemical and metal industries and shipbuilding; the growth in these lines served mainly for self-supply. The progress of the textile industries was largely in the nature of further expansion along old lines, with some increase in the range of products and a considerable broadening of export markets. The establishment of a large number of new branches of manufacture was especially stimulated by the temporary shutting off of exports from the Central Powers. This caused a number of countries to turn to Japan as an adaptable workshop for a variety of minor products. The war also accelerated the conversion of a number of industries from the household to the factory stage, and it was these semifactory industries that produced most of the newer lines of goods exported from Japan during the last few years, particularly those coming to the United States.

The high price and large profits obtainable brought a period of unprecedented prosperity. This gave rise to an exaggerated business optimism and a widespread industrial boom, culminating in the fall of 1919 in an excessive flotation of new companies and a speculative advance of prices, at the very time when foreign purchases were falling off and total imports were beginning to exceed exports. The inevitable reaction, precipitated in the spring of 1920 by the governmental restriction of bank credits, brought on a financial and indus-

trial depression. With the sharp drop in prices and the falling off of trade many speculative ventures of various sorts have been swept away, many war-established plants have shut down, and industrial activity generally has been considerably curtailed.

While the panic of 1920 in Japan has thus caused a definite recession in that country's industrial advance, the essential economic structure of the country appears sound, and certain war-time gains will probably be permanent. These gains are enlarged manufacturing capacity, acquired skill in a number of new lines, and the decided extension of foreign markets and trading outposts. A return to normal market conditions will find Japan measurably ahead of her prewar position in these respects. With unhealthy elements largely swept away, the stronger concerns in Japanese business are reported to be working back, by concerted action, largely through syndicates looking to stabilization of price and disposal of stocks abroad, and with the definite financial assistance of the Government, toward a more stable condition of industry and trade. The strong war-time and postwar boom seems to have been definitely checked, and the prospect is that the period ahead will be one of slow consolidation, marked by an effort to hold and solidify the industrial and trade advance of the past five years.

Despite the remarkable progress of recent years, Japan can hardly be said to have reached the place of an advanced industrial nation. Among the conditions favoring her industrial progress have been a large body of docile workers with a low standard of living; geographical proximity to Asia, the source of much of her raw materials and the natural outlet for her manufactured products; a growing and subsidized merchant marine; and a native adaptability and eagerness to reproduce the industrial achievements of western nations. Add to these a Government well organized to foster and actually assisting in the industrial and commercial advancement of the nation. On the other hand, Japan has been handicapped in her industrial progress by a number of disadvantages. Among them are her relative poverty in some essential raw materials; the new and unstabilized condition of her industrial development; the lack of adequate modern machinery; and the absence of a body of skilled workers habituated to factory production. With these must be noted the still inefficient organization of many of her industries, her imitative rather than original methods, the lack of a high standard of quality in her products, and a too ready tendency to speculate.

Japanese manufacturing finds itself in transition from the medieval household and craftsmen stage to that of a large scale, standardized, mechanical production under factory conditions. Many industries still lag in the household stage, and a large number of so-called factory industries are still dispersed in small shops, where improvised machinery and laborious methods are employed. There is also the frequent practice of "farming out" certain parts of the work to be done in homes and under crude conditions.¹ Despite the comparatively low wages and long hours which still mark Japanese industry, the advantage which Japanese manufacturers are believed to possess in labor costs is, per unit of output, in many cases very doubtful, owing

¹ This situation rendered it unusually difficult to obtain exact estimates of representative costs of production in Japan.

to the low efficiency of the individual operative, the inadequate machinery with which he works, and the uneconomical organization and inexperienced direction of plants. Moreover, the threefold increase in wages in Japan since 1914 and the high initial cost of the plant and equipment to which the new industrial ventures of the last few years have been subject, constitute material handicaps, in the way of increased operating costs, that will tend to curtail Japan's former competitive advantage in lower labor costs and overhead, as compared with the older industrial countries.

The surplus production of the major industries in Japan, beyond domestic needs, goes to supply the adjacent nonmanufacturing markets of the Orient with factory products of an inferior sort, made after European models. They are competitive only in a small measure with the higher grades and more costly products of the western countries.

In the more advanced and more critical countries of the West, Japanese factory products have found but limited markets. Japanese exports to the countries of western Europe and to the United States have been in the main of three classes: (1) Natural products or raw materials and their immediate derivatives, as raw silk, tea, vegetable oils, camphor and tungsten; (2) certain specialties distinctly Japanese or oriental in character, as kimonos, "blue-printed" or worked tablecloths, cotton crêpe, decorated pottery, Japanese fans, lacquer ware, and the like; and (3) a variety of minor manufactured products, many of them calling for considerable manual labor, and produced under semifactory conditions. Exceptional among the manufactured products are the exports of certain kinds of silk piece goods and chinaware; the raw materials for these products are native and abundant in the country and the manufacture of them is an ancient art.

Much of the largest part of the shipments from Japan to the western countries belongs to the first and second of these classes. Thus, raw silk alone made up nearly three-quarters in value of the total exports of Japan to the United States during the year 1919. Most of our imports from Japan have been noncompetitive. But during the last few years, competition with American products has been felt from Japanese vegetable oils, peas and beans, certain grades of dinner ware, and a variety of minor manufactured products, such as straw mattings, knitted cotton gloves, brushes, buttons, matches, toys, and notions. The manufacture on a large scale of a number of these products is of recent development both in the United States and Japan, and was stimulated by the war-time curtailment of imports from Europe.

The first part of the commission's report will be a general survey of the industrial situation in Japan after the war and will cover the situation up to the beginning of the present economic depression. It will describe the position of Japan as an industrial power with regard to labor, fuel, and power, raw materials, and transportation; will sketch briefly the general industrial and financial structure of the country and the effects of the war upon Japanese industrial development in the principal branches of manufacture; and will present certain comments upon the outlook for the future of Japanese industry, particularly in relation to trade with the United States and the

character of the competition that may be expected in the American market.

The second part of the report will consist of a more detailed study of the cotton and silk manufacturing industries of Japan. These have been of special interest to American business, as they represent two important types of industrial development in Japan. An intensive study of the two types will therefore serve to illustrate the chief problem and the characteristics which mark Japanese industry generally. The study is based upon first-hand observation and inquiry, often in remote parts of Japan seldom visited by foreigners. For the cotton and silk industries, the report will cover the prewar status of Japan, the war-time expansion in manufacturing and extension of trade, the postwar status and problems, and the prospective trend of development in the future, particularly with regard to trade with the United States. The report will include a comparison of the Japanese and American industries and a statement of the relative conditions of production and the factors in cost, so far as direct comparison is possible.

As an appendix to the report will be included a careful study of the tariff policy of Japan.

TARIFF INFORMATION SURVEYS.

SCHEDULE A: CHEMICALS, OILS, AND PAINTS.

BARYTES, BARIUM CHEMICAL, AND LITHOPONE INDUSTRIES.

In January, 1920, the commission started an investigation in these three closely allied industries, giving special attention to costs of production. This work was completed during the year, and the results were published in a report entitled "Barytes, Barium Chemical, and Lithopone Industries, including Costs of Production, 1919."

Barytes is used as a raw material for the manufacture of barium chemicals and lithopone, and, in the ground form, as a white inert filler for paints, paper, linoleum, oil cloth, and rubber goods. The barium chemicals are used as a pigment in paints (*blanc-fixe*), in the ceramic industry for enamel ware and certain kinds of optical glass (barium carbonate), in the manufacture of color lakes (barium chloride), and in the manufacture of hydrogen dioxide (barium dioxide). Lithopone is used as a pigment in enamel wall paints and elsewhere as an inert filler similar to ground barytes.

Barytes.—Prior to the war the domestic crude barytes industry was localized in Missouri. Middle western manufacturers of ground barytes, who use from 55 to 65 per cent of the total domestic consumption, obtained their supplies of the raw material from Missouri. Imported crude barytes from Germany supplied the lithopone industry then restricted to the Atlantic coast district. War conditions caused a four-fold increase (from 50,000 tons to over 200,000 tons) in the domestic output of crude barytes. The demand came from the eastern lithopone manufacturers, and the new barium chemical industry established to supply chemicals formerly imported from Germany. This increased output was accomplished largely by development of deposits in Georgia, Tennessee, and Kentucky, and by a doubling of production in Missouri.

A study of freight rates disclosed the fact that southern producers have an advantage of about \$1.25 per ton over Missouri producers in supplying eastern manufacturers of lithopone and barium chemicals. The outlet for Missouri crude barytes was improved during the war by the establishment of lithopone plants in the vicinity of Chicago and St. Louis. Ground barytes produced in the Middle West under the duty of \$5.25 per ton (act of 1909) was, prior to the war, able to compete in eastern markets with imported ground barytes, and it has continued to be shipped from this section into eastern markets.

The producers in the southern district are particularly interested in maintaining the eastern market for crude barytes. The southern district, however, has geological and geographical disadvantages which will probably hinder domestic barytes from competing on even terms in the Atlantic coast market with crude barytes imported from Germany. The western producers and consumers are little affected by a tariff on crude barytes. From a tariff standpoint producers in this district are chiefly interested in retaining the eastern market for ground barytes which they supplied prior to the war.

Barium chemicals.—At the outbreak of the war, the United States was wholly dependent on imported barium chemicals; Germany supplied about two-thirds of our requirements. Barium chemicals have some military significance, as evinced by the use of barium nitrate in green signal lights, blanc-fixe as a pigment for "battleship gray" paint, and barium dioxide for the manufacture of the antiseptic, hydrogen peroxide, and in tracer bullets for airplane ammunition. Under the stimulus of war conditions plants for making barium chemicals were built in this country, chiefly in the East and Southeast, though some were also established in Ohio and Illinois. The domestic output in 1918 had reached 46,000,000 pounds, or about two and one-half times the 1914 imports.

The chief markets for barium chemicals are in the East, and with former conditions restored, the industry will be subjected to competition in these markets from imported barium chemicals. Eastern plants are so situated that they can use either imported or domestic barytes as raw material. Those plants located close to the southern barytes deposits and in the Middle West will depend largely on domestic barytes. Logically a duty on barium chemicals must be considered in conjunction with any duty on the raw material, barytes.

Lithopone.—The importance of the lithopone industry in relation to the domestic barytes industry is shown by the fact that in 1919 more than one-half of the total domestic consumption of barytes was required for lithopone. From 1910 to 1919 the domestic output of lithopone increased six-fold, or to about 145,000,000 pounds, and supplied from 84 to 100 per cent of the domestic consumption. In 1919 about 80 per cent of the lithopone was produced in the Atlantic coast district. During 1920 a considerable export trade in lithopone was developed. Since barytes is one of their raw materials, lithopone manufacturers are naturally interested in obtaining a supply at the lowest possible cost, and they generally favor a low duty on crude barytes. The price of barytes constitutes about 14 per cent of the total factory cost of lithopone. Therefore any duty on lithopone should include a compensatory duty in proportion to this percentage of the total cost.

Costs.—The cost section of the report gives in detail the cost of mining crude barytes and the cost of manufacturing from it ground barytes, barium chemicals, and lithopone. The cost of mining crude barytes in western mines increased from \$5.30 per short ton in 1916 to \$7.74 in 1919, or 46 per cent, while the increase in southern mines was from \$3.89 to \$7.39, or 90 per cent. The cost of manufacturing ground barytes increased from \$11.21 to \$19.25 per short ton in 1919, an increase of 70 per cent. The cost per pound of producing barium chemicals during 1919 was \$0.0294 for blanc fixe, \$0.0316 for barium carbonate, \$0.0539 for barium chloride, and \$0.197 for barium peroxide. The average cost of manufacturing lithopone during 1919 was \$0.0602 per pound. Of this total cost, 43 per cent was for materials, including barytes, 18 per cent for labor, 34 per cent for overhead, and 5 per cent for sales expense. The apparent profit of the industry was 65 cents per 100 pounds. Of the materials entering into lithopone, zinc is the most expensive per pound.

THE CRUDE BOTANICAL DRUG INDUSTRY.

Certain crude drugs of vegetable origin were discussed in a report issued by the commission in September, 1920. These drugs were defined and classified, and the world's trade, production, and consumption were considered in connection with the domestic tariff treatment and policy.

Upon the outbreak of the war and the partial or complete cutting off of imported supplies, the prices of crude drugs rose to unprecedented heights. The influenza epidemic and the Army requirements called for large quantities of drugs and tended further to accelerate the upward trend of prices. Efforts were made to cultivate several indispensable drugs which appeared suited to American climatic conditions. Marked success was reported with two important medicinals, belladonna and digitalis, and also with cannabis indica, the drug obtained from Indian hemp. Henbane, stramonium, valerian, and Levant wormseed, all important drugs, have been cultivated with varying success, and the cultivation of others has been undertaken on an experimental scale.

Cultivation and preparation of botanical drugs in general requires specialized agricultural and technical skill and experience, valuable land, some special appliances, and considerable hand labor. The scope of the industry is further limited by exacting climate and soil requirements, by liability to insect and disease damage, and by a comparatively small demand, which in most cases can not be stimulated.

Competition in the past was rarely evident between American medicinals and those produced abroad, and heretofore the crude botanical drug industry has not been considered in tariff legislation. For discussion in this connection the report divides these products into three classes:

(1) Exotic drugs not commercially produced in the United States. These include, among others, opium, coca leaves and cocaine, cinchona and quinine, nux vomica and strychnine, and buchu leaves; (2) exotic drugs produced in the United States under emergency conditions. The most important drugs of this class are belladonna, stramonium, henbane, digitalis, cannabis indica, valerian, and Levant

wormseed; (3) indigenous drugs not produced to any important extent elsewhere than in the United States, such as ginseng, cascara sagrada, and hydrastis or goldenseal.

The last class presents no tariff problems, since there are no imports, hence no foreign competition.

The foreign drugs of the first class have not been commercially producible in the United States, except at high cost, and it may be presumed, therefore, that the raising of revenue was the principal reason for the imposition of duties on several of these largely imported and valuable exotic drugs. The annual revenue from an individual drug varies from a few dollars, as is the case with gentian and sarsaparilla, to over a million dollars, as with opium and its alkaloids. Import statistics indicate that the rate of duty has been without influence on the volume of imports. A pound of a crude drug represents from 250 to 7,000 medicinal doses, and the amount of duty borne by a medicinal dose imposes no serious burden on individual consumers. Many exotic drugs, which in a crude state are admitted free of duty, are dutiable at 10 per cent ad valorem if advanced in value or condition by shredding or grinding. While this differential was presumably established for the benefit of the domestic drug-grinding industry, it has had additional effect in hindering the importation of products liable to sophistication. This differential is not, however, consistently applied. In the case of a number of drugs which are mentioned specifically in schedule A, or on the free list, both the crude and advanced products are entered under the same provision.

The expense of cultivation under American conditions of the majority of exotic drugs so much exceeds their former import price as to render it doubtful if commercial cultivation of them can persist after normal trade is resumed. While their aggregate value is relatively small, their importance to the public health can hardly be overestimated. They can not be replaced by synthetic medicinals, nor can their production be immediately stimulated and secured in emergency, as is the case with most manufactured medicines.

These products have received little or no attention in previous tariff revisions, but the advisability of their continued cultivation in the United States deserves serious consideration.

THE INCANDESCENT GAS MANTLE INDUSTRY.

A survey of the incandescent gas mantle industry was published in April, 1920. This report presented the results of a study of the manufacture of gas mantles and certain related articles with special reference to the effect of the tariff.

The incandescent gas mantle was invented by the Austrian chemist Welsbach. Following its introduction to the trade, in 1893, the German and Austrian industries grew extensively and for a time supplied the demands of Europe and America. In 1906 Germany exported gas mantles to the value of \$2,250,000, but since that year factories have been erected in almost every country and there has been a considerable reduction in her exportations. The present world consumption is probably in excess of 300,000,000 mantles per year, and of this number at least 80,000,000 are annually sold in the United States.

The domestic industry is represented by 40 or more manufacturers, although the bulk of the output is contributed by the two largest producers. In recent years the United States has developed a considerable export trade in gas mantles.

From an economic point of view, gas mantles are important in that by their use enormously increased lighting efficiency may be obtained from coal gas. During the war the gas mantle assumed some military significance. The demand for toluol for the important explosive T. N. T. was so great that even the small amounts present in illuminating gas were removed and diverted to war use. This process, known as "stripping," was installed in most of our larger cities, and so seriously affected the quality of the gas for lighting purposes that the flat-flame burners became practically useless. The lighting efficiency with gas mantles, however, was unaffected, and thus their use indirectly increased our supply of necessary explosives.

The gas mantle consists of a mixture of two rare earth oxides, in the approximate proportion of 99 parts of thoria to 1 part of ceria. These oxides occur in nature in the form of the mineral monazite sand, which is not mined commercially in the United States at the present time. The domestic gas mantle industry, therefore, depends on Brazil and India for its supply of raw material. Monazite sand occurs to a limited extent in the Carolinas, but the deposits are small and scattered and can not be worked in competition with the more easily mined and richer foreign supplies. Of the world's production of about 3,500 short tons in 1917, the Indian deposits yielded 63.5 per cent and the balance came from deposits in Brazil. Indian monazite contains a higher percentage of thorium (8 to 12 per cent, as compared with 4 to 6 per cent for Brazilian monazite), and therefore contributed about 90 per cent of the world's thorium in 1917. Domestic imports of monazite sand prior to the war averaged about one and one-half million pounds, valued at \$130,000. They increased to almost 5,000,000 pounds in the fiscal year 1918, primarily because of increased demand for the intermediate material, thorium nitrate. The domestic output of this chemical rose from 150,000 pounds in 1913 to 440,000 pounds in 1917. Production has subsequently dropped off considerably, however, amounting to 387,707 pounds during 1918 and to 239,163 pounds during 1919. The United States began to export thorium nitrate in 1914 and since that time the exports have appreciably exceeded the imports.

The gas mantle industry presents two interesting by-products, pyrophoric alloy and mesothorium. The former, which is a metal made by alloying iron with the surplus cerium obtained from monazite sand, gives off a shower of sparks when scratched with a file, and this property has been utilized for the manufacture of automatic gas and cigar lighters. During the war pyrophoric alloy was used in star shells and tracer bullets. The other by-product, mesothorium, is a radio-active substance which occurs in monazite sand in extremely small amounts—1 ton containing only about five-millionths of a pound. However, mesothorium has the same use as radium in therapy and in luminous paints, and it is, therefore, extremely valuable. At least two domestic manufacturers are producing mesothorium, and the price quoted is about \$45 to \$75 a milligram—or, roughly, \$2,000,000 an ounce.

Paragraph 154 of the tariff act of 1913 imposes a duty of 25 per cent ad valorem equally on the crude raw material, monazite sand (which is no longer mined commercially in the United States), on the refined intermediate material, thorium nitrate, and on the finished product, the incandescent gas mantle. The tariff failed to build up the domestic monazite mining industry, and it gave an advantage to the German manufacturers of thorium nitrate, who before the war practically controlled the world's commerce in it. The mantle manufacturers claim that since this raw material is not available from domestic sources the imports should be admitted free of duty. Mesothorium and pyrophoric alloy are not specifically enumerated in the tariff. Imports of mesothorium have been held free of duty as a "radio-active substitute" (par. 585), while pyrophoric alloy is dutiable under paragraphs 154 or 167 at 10 or 20 per cent ad valorem, depending upon its degree of manufacture.

CENSUS OF DYES AND OTHER COAL-TAR CHEMICALS, 1919.

In order to obtain information necessary for the interpretation of certain administrative provisions of the revenue act of September 8, 1916, the Tariff Commission, under the continuing direction of the President, has taken a third census of dyes and other products of coal-tar origin. Since a general census of manufactures for 1919 was to be taken by the Bureau of the Census, it was decided to avoid duplication of work by a cooperative arrangement with that bureau. Owing to the magnitude of the industries canvassed by the Census Bureau, reports have been received by the commission much later than in previous years. The information is, however, practically complete at this time, and it is expected that the results will be published during December, 1920. The data at hand are sufficient to indicate general developments in the industry during 1919.

A significant development during 1919 in the coal-tar industry, is the increase of 17.2 per cent in the productive capacity of by-product coke ovens in the United States, with the result that the production of coke in by-product ovens exceeded that of the wasteful beehive ovens. There is no question that, with the possible exception of anthracene, adequate supplies of fundamental raw materials for the coal-tar chemical industry are now available from American sources. Considerable progress was made in producing supplies of anthracene, the output being about three times as great as in 1918. Moreover a much larger proportion of it was refined. But although this progress is encouraging, a much greater increase in output must be secured before there will be sufficient anthracene to supply the manufacture of alizarin and vat dyes. It may be roughly estimated that the 1919 production of crude anthracene contained less than one-fifth the amount of pure anthracene required to supply American needs. The problem of securing enough anthracene is probably the most important and fundamental awaiting solution in the industry. Important work now under way points to the solution of this problem in the near future. An increased output will come either from tar distilleries, or by a synthetic process for making anthraquinone from other available raw materials.

A comparison of the number of intermediates produced shows a marked increase—from 140 in 1918 to about 215 in 1919—and there was also a substantial growth in the output of many of them. The transition from war to peace conditions during 1919 is reflected in the decrease in certain intermediates, particularly phenol and monochlorbenzol, which were used in the manufacture of explosives, and in some others which were used in the manufacture of dyes for military uniforms. There are many examples of a large increase in the production of intermediates which are difficult to make but which are required in the dyes of best quality. A deduction of intermediates used for explosives from the total for all intermediates produced in 1918 and 1919 shows an increase of over 10 per cent in the output of intermediates used in 1919 for the production of dyes and products other than explosives or near gases. The progress made in intermediates derived from anthracene is of special interest. In 1919, 10 of these were manufactured as against only 5 in 1918. The output of anthraquinone also, the most important of them, was about ten times as great in 1919 as in 1918.

The total output of all dyes during 1919 was about 63,000,000 pounds, valued at \$67,000,000, an increase of approximately 8 per cent over the 1918 production. The development in the production of dyes in 1919 is not accurately shown by a comparison of totals alone. There was a marked decrease in dyes for military uniforms which was more than offset by increased output of other important dyes. The average price of dyes in 1918 and 1919 was practically the same, slightly over \$1 per pound. The quality of the dyes, however, improved considerably, owing to a partial replacement of many of the dyes produced in 1918 by others of more satisfactory character. The consumer, accordingly, received better value for the price paid in 1919 than in previous years. During 1919 there were about 90 manufacturers of dyes as against 78 in 1918.

The production of indigo (20 per cent paste), a vat dye, reached nearly 9,000,000 pounds, with a value of over \$5,000,000. This is in excess of the 1914 importation by 356,000 pounds, and of the 1918 production by about 5,800,000 pounds. Four other vat dyes were made on a commercial scale during 1919, but the output was only a small percentage of the prewar consumption. Marked progress was made in this field, however, and further developments may be anticipated.

The production of six alizarin dyes, including alizarin, was reported in 1919 as compared with three in 1918. The development of these mordant dyes is an important addition to the American industry.

Among the coal-tar medicinals there has been a substantial increase in the output of many products already well established in 1918. Moreover, a considerable number of new medicinals were produced on a small scale.

COST OF PRODUCTION IN THE DYE INDUSTRY, 1918 AND 1919.

In February, 1920, the commission published a report entitled "Costs of production in the dye industry, 1918 and 1919."

On account of conditions peculiar to this industry, the commission found it necessary to emphasize the uncertainty of conclusions based upon costs which during the whole period covered were abnor-

mal and fluctuating. The manufacturing operations and methods in the industry were not as yet well organized, and normal routine had been reached for but a comparatively few products. Production had proceeded almost regardless of cost since quantity production and prompt delivery were considered of more importance than cheapness. Uniform cost accounting methods had not been instituted in the industry and satisfactory comparison of reports from the various firms could, therefore, not be made. For example, there was wide variance in the methods of distributing overhead expenses, which in the dye industry, because of the relatively large capital investment, constitutes a considerable portion of the total cost.

It was found that generally the costs of the intermediates had been falling in 1919, as compared with the 1918 record, whereas the dye costs were rising. This was especially true during the third quarter of 1919. Sufficient evidence to account for this diverging tendency could not be obtained. It is conceivable, however, that the manufacturing processes were not sufficiently standardized to permit economical production upon a large scale, although small quantities might be produced at a reasonable figure. Further analysis showed that the cost of materials is almost as great as the cost of direct labor and overhead expenses. The reason for this is that the materials used in the production of both dyes and intermediates are themselves often highly fabricated products. Direct labor costs for certain dyes showed wide variations among the different manufacturers, in some cases amounting to 100 per cent.

The report shows that domestic costs were from two to five times higher than the prewar prices of the same dyes and intermediates imported from Germany. Also, the reparation prices of dyes offered by the German cartel with the mark valued at par, in most cases, were a trifle higher than the price in this country of the same commodities. It can not be concluded from this, however, that the American producers can compete with foreign manufacturers in all branches of the industry, because in some classes of products such as vat and alizarin colors, which are not shown in the statistical tabulations of the report but which are of fundamental importance to a well-rounded industry, the foreign producers have a competitive advantage born of long practice in complicated productive processes.

SURVEYS OF OTHER CHEMICAL INDUSTRIES.

During the year 1920 considerable progress was made in the preparation of surveys of chemical commodities in Schedule A and the free list. About 60 surveys, which included a much greater number of individual commodities were completed. In addition about 15 surveys prepared in previous years were thoroughly revised and brought to date in conformity with changed conditions in those industries. By January, 1921, surveys for practically all of the commodities in Schedule A, as well as those chemicals included in the free list, will have been completed. Should a revision of the tariff occur during 1921, the commission will be able to furnish Congress with information on practically every chemical commodity mentioned in the tariff.

These surveys are in manuscript form, and until they are published will not be available for distribution to the public. They embrace the following commodities:

COMPLETED SURVEYS—SCHEDULE A.

- Acetanilid.
 Acetic anhydrid.
 Acetone.
 Acetphenetidid.
 Acids and related materials:
 Acetylsalicylic acid or aspirin.
 Boric acid and borax—
 Borate of lime.
 Borate of soda.
 Crude borate materials.
 Citric acid and citrate of lime.
 Formic acid.
 Gallic and pyrogallic acids.
 Glycerophosphoric acid.
 Lactic acid.
 Oxalic acid.
 Tannic acid, tannin and nutgall extracts.
 Agar-agar. (See Gelatin.)
 Alizarin assistants. (See Oils, castor.)
 Aloes, gum.
 Aluminum compounds:
 Alum and alum cake.
 Hydrate of alumina or refined bauxite,
 Sulphate of alumina.
 Amber and amberoid, crude.
 Ambergris.
 Ammonium compounds:
 Ammoniacal gas liquor.
 Carbonates of ammonia.
 Liquid anhydrous ammonia.
 Muriate of ammonia.
 Nitrate of ammonia.
 Perchlorate of ammonia.
 Phosphate of ammonia.
 Sulphate of ammonia.
 Amyl acetate. (See Ethers and esters.)
 Amyl nitrite. (See Ethers and esters.)
 Amylic alcohol. (See Fusel oil.)
 Antimony compounds.
 Antipyrine.
 Balsams:
 Fir or Canada.
 Peru.
 Tolu.
 Barium chemicals:
 Carbonate of barium precipitated.
 Chloride of barium.
 Dioxide of barium.
 Blanc-fixe or precipitated barium sulphate.
 Barytes and witherite.
 Belladonna, leaves and roots.
 Black pigments:
 Bone black.
 Gas black.
 Ivory black.
 Lamp black.
 Vegetable black.
 Bleaching powder, or chloride of lime.
 British gum. (See Dextrine.)
 Bromine.
 Buchu leaves.
 Caffein and compounds of:
 Tea waste, siftings, sweepings.
 Calcium sulphate and satin white.
 Camphor.
 Cannabis, herb.
 Cantharides.
 Carbon tetrachloride.
 Celluloid and cellulose esters. (See Pyroxylin plastics.)
 Ceramic colors and enamels.
 Chalk.
 Chamomile flowers.
 Chicle.
 Chinese nut oil.
 Chloral hydrate.
 Chloroform.
 Chlorophyll extract.
 Chrome pigments:
 Chrome green.
 Chrome yellow.
 Chromium compounds:
 Chromic acid.
 Chromium hydroxide.
 Potassium chromate and bichromate.
 Sodium chromate and bichromate.
 Civit.
 Coca leaves.
 Cocaine, ecgonine and derivatives.
 Collodion. (See Pyroxylin plastics.)
 Color lakes.
 Coloring for liquors.
 Copals and varnish gums.
 Crayons.
 Dextrine and British gum.
 Dyewood extracts, red:
 Barwood.
 Brazil wood.
 Camwood.
 Sanders wood.
 Ecgonine. (See Cocaine.)
 Enfluerage, greases, and floral essences.
 Ergot.
 Essential oils.
 Ethers and esters:
 Amyl acetate.
 Amyl nitrite.
 Ethyl acetate.
 Ethyl chloride.
 Sulphuric ether.
 Eucalyptus and eucalyptol.
 Ferro-ferri-cyanide blues.
 Fish sounds, prepared. (See Gelatin.)
 Flavine. (See Quercitron.)
 Formaldehyde or formaline.
 Fusel oil or amylic alcohol.

Fustic.
 Gelatin and glue:
 Agar-agar.
 Fish sounds, prepared.
 Glue size.
 Isinglass.
 Gentian.
 Glycerin.
 Ichthyol.
 Iodoform and potassium iodide.
 Iron oxide pigments.
 Isinglass. (See Gelatin.)
 Lead compounds:
 Acetate of lead.
 Nitrate of lead.
 Lead oxides:
 Litharge.
 Orange mineral.
 Red lead.
 Licorice and extracts of.
 Lithopone.
 Logwood and extracts of.
 Magnesium compounds:
 Calcined magnesia.
 Carbonate of magnesia.
 Sulphate of magnesia or Epsom salts.
 Menthol.
 Mercurial preparations:
 Calomel.
 Corrosive sublimate.
 Nutgalls, extracts of. (See Tannic acid.)
 Ocher and ochery earth.
 Oils, essential and distilled:
 Attar of roses.
 Citronella and lemon-grass oils.
 Citrus oils:
 Bergamot.
 Cedrat.
 Lemon.
 Lime.
 Neroli or orange flower.
 Orange.
 Eucalyptus oil.
 Lavender and aspic oils.
 Peppermint oil.
 All other:
 Amber.
 Anise or anise seed.
 Cajeput.
 Camomile.
 Caraway.
 Cassia.
 Cinnamon.
 Fennel.
 Jasmine.
 Juglandium.
 Juniper.
 Mace.
 Origanum.
 Rosemary or anthoss.
 Thyme.
 Valerian.
 Oils, expressed vegetable:
 Almond oils.
 Castor oil and alizarin assistants.
 Hempseed oil.
 Linseed oil.

Oils, expressed vegetable—Continued.
 Peanut oil.
 Poppy-seed oil.
 Sesame-seed or bean oil.
 Rapeseed oil.
 Opium.
 Opium derivatives:
 Laudanum.
 Morphia or morphine.
 Orris root.
 Osage orange.
 Paints.
 Paris white. (See Whiting.)
 Perfumery, cosmetics, and toilet preparations.
 Perilla oil.
 Persian berries and extract of.
 Phenolphthalein.
 Potash and potassium compounds:
 Bicarbonate of potash, refined.
 Carbonate of potash.
 Chlorate of potash.
 Chromate of potash.
 Crude potash or black salts.
 Hydrate of potash.
 Muriate of potash.
 Nitrate of potash or saltpeter, crude.
 Permanganate of potash.
 Sulphate of potash.
 Potassium iodide. (See Iodoform.)
 Pyroxylin plastics:
 Celluloid.
 Cellulose and manufactures of.
 Collodion.
 Quercitron and flavine.
 Saffron, safflower extract, and saffron cake.
 Salol.
 Salts of bismuth, gold, platinum, rhodium, silver, and tin.
 Sarsaparilla root.
 Senna leaves.
 Shellac.
 Sienna and umber.
 Soaps.
 Sodium:
 Bicarbonate.
 Chlorate.
 Chromate. (See Chromium compounds.)
 Hydroxide (caustic soda).
 Phosphate.
 Prussiates and cyanide.
 Sulphate, crystallized (Glauber's salt).
 Sulphide.
 Sulphite and thiosulphate.
 Steatite. (See Talc.)
 Styrax.
 Sulphuric ether. (See Ethers and esters.)
 Sumac.
 Talc and steatite:
 French chalk.
 Ground talc.
 Talcum.
 Tartaric acid and tartrate materials:
 Argols or crude tartar.
 Calcium tartrate, crude.

Tartaric acid and tartrate materials—	Urea.
Continued.	Varnishes.
Cream of tartar.	Vermillion reds.
Rochelle salts.	White lead.
Wine lees.	Whiting and Paris white.
Terpin hydrate.	Witherite. (See Barytes.)
Thymol.	Zinc chloride.
Tin chlorides.	Zinc pigments.
Ultramarine and wash blue.	Zinc sulphate.
Umber. (See Sienna.)	

COMPLETED SURVEYS—FREE LIST.

Abrasives, artificial.	Milk sugar.
Acids:	Mineral salts.
Acetic or pyroigneous.	Myrobolan fruit and extract.
Hydrochloric or muriatic.	Naval stores, includes:
Hydrofluoric (fluoric).	Turpentine.
Nitric.	Rosin.
Phosphoric and phosphorus.	Oils:
Silicic. (See Sodium silicate.)	Birch tar.
Sulphuric.	Cajeput. (See Essential oils, Schedule A.)
Aconite.	Croton.
Annatto extract.	Ichthyol.
Archil. (See Cudbear.)	Juglandium. (See Essential oils, Schedule A.)
Asafetida.	Palm and palm kernel.
Balm of Gilead.	Chinese nut and other nut oils.
Bone black and blood char.	Paris green and London purple.
Calcium chloride.	Phosphorus. (See Acids phosphoric.)
Calcium carbide.	Pyrites.
Calcium nitrate. (See Sodium nitrate.)	Quebracho logs and extract.
Calcium cyanamid.	Quinine and all alkaloids from cinchona bark.
Cardamon seeds.	Radium and radioactive substances.
Casein or lacterene.	Salep.
Castor or castoreum.	Salt.
Chestnut extract.	Santonin.
Cinchona and other quinine barks.	Shell lac and other lac.
Cocculus indicus.	Sodium:
Cochineal.	Arseniate.
Copperas or sulphate of iron.	Carbonate (soda-ash).
Copper sulphate and acetate.	Nitrate.
Corundum. (See Emery.)	Salt cake and niter cake.
Cudbear and archil.	Silicate.
Dandelion root.	Strontium compounds.
Emery and corundum.	Strychnine.
Explosives.	Sulphur or brimstone.
Gambier extract.	Turmeric.
Hones and whet-tones.	Uranium salts.
Iodine.	Wood distillation product
Iperac.	Calcium acetate.
Jalap.	Methyl alcohol.
Leeches.	Charcoal.
Litmus.	Tar and pitch of wood
Madder and extracts of.	
Manna.	
Marshmallow or althea.	

SCHEDULE B: EARTHS, EARTHENWARE, AND GLASSWARE.

The more highly manufactured and competitive articles in Schedule B, such as china and porcelain, earthenware, glassware, and scientific instruments, have been covered in some detail. The remaining commodities consist chiefly of raw materials and bulky, relatively low-priced products in which the cost of transportation in large measure determines the competitive strength of the American industries.

The following surveys are completed, but changing industrial conditions make partial revision advisable:

Abrasives:

- Flints and flintstones.
- Grindstones.
- Pumice—
 - Crude.
 - Ground.
 - Manufactures of.
- Rottenstone.

Chinaware and porcelain:

- Ornamental ware, Parian.
- Table ware.
- Toilet ware.
- Bisque and parian.

Earthenware:

- Common yellow.
- Common brown.
- Common gray.
- Rockingham ware, ornamental.
- Table.
- Toilet.
- Granite.

Earthenware—Continued.

- Semiporcelain.
- Cream-colored.
- Fluorite or fluorspar.
- Glassware:
 - Blown.
 - Bottles.
 - Cut.
 - Decanters.
 - Demijohns.
 - Molded.
 - Optical and chemical.
 - Plate, cast, polished, unsilvered.
 - Pressed.
 - Window.
- Lime.
- Optical instruments:
 - Field glasses.
 - Lenses.
 - Microscopes.
 - Opera glasses.
 - Surveying instruments.

SURVEYS UNDER WAY—SCHEDULE B.

Bricks:

- Bath.
- Common—
 - Wire-cut.
 - Molded.
 - Pressed.
- Ornamental—
 - Faced.
 - Tapestry.
 - All other.
- Refractory—
 - Bauxite.
 - Chrome.
 - Fire.
 - Magnesite.
 - Silica.
 - All other.

Carbon, manufactures of:

- Brushes.
- Disks.
- Electrodes.
- Filter tubes.
- Plates.
- Porous pots.
- Other.

Cement:

- Gypsum.
- Keene's.
- White Portland.
- Other, n. s. p. f.

Chemical stoneware.

Clays and earths:

- Ball clay.
- China clay.
- Common clay.
- Fuller's earth.
- Kaolin.
- Refractory clays.
- Paper clays.
- Pipe clays.

Drain pipe and tile.

Electrical porcelain.

- Electric light bulbs and lamps.
- Enamels (fusible and glass).
- Feldspar.
- Gypsum:
 - Crude.
 - Calcined.
 - Ground.
 - Manufactures of—
 - Keene's cement.
 - Molds and casts.
 - Plaster board.
 - Wall board.
 - Plaster block.
 - Staff.
 - Statuary.
- Sanitary earthenware.
- Sewer pipe.

Sanitary earthenware.

Sewer pipe.

Tiles:

- Flooring and wall—
 - Ceramic-mosaic.
 - Enameled.
 - Encaustic.
 - Fireproofing.
 - Flint.
 - Glass.
 - Glazed.
 - Grooved.
 - Plain.
 - Quarry.
 - Spar.
 - Vitrified.
- Roofing—
 - Corrugated.
 - Flat.
 - Vitrified.
- Manufactures of—
 - Friezes.
 - Mantels.
 - All other.

SCHEDULE C—METALS AND MANUFACTURES OF.

Résumé.—The great variety of commodities embraced in Schedule C may be roughly divided into four broad classes, viz, machinery, hardware, other iron and steel, and nonferrous metals and minerals. Work on all these classes was pushed as rapidly as possible with the staff assignable to this schedule. About 145 new surveys were completed during the year. Of these about 75, previously reported, were revised more or less completely and brought up to date with changing conditions in the industries.

As the work has progressed, increasing difficulty has been encountered in grouping the wide range of commodities that come within this schedule. This has necessitated a thorough study, not only of Schedule C of the tariff act of 1913, but also of the free list and of Schedules A, B, and N. It is manifestly an almost endless task to prepare separate units on each of the thousands of commodities that may be classed as ores, metals, metal manufactures, and metallurgical products. Because of the rapid developments in certain industries since 1913, new products, not specified in the present tariff, have come into prominence and require separate discussion. Moreover, there are many products which, although specially provided for in the tariff, do not warrant individual treatment, some of them being practically obsolete. However, in many cases the industries are so interrelated that separate treatment would involve a large amount of unnecessary duplication of material.

Reclassification problems have been less serious in the nonferrous group and practically all these commodities have now been covered by surveys, the staff engaged on this work having recently taken over the minerals and ceramic materials of Schedule B.

In connection with the work on machinery, it was necessary to make a detailed analysis of the imports classed as "all other machinery" in 1914 and since the war from the records of the New York customhouse, and an expert was detailed to this work for several months. It was decided that certain types of special machinery, imported under this classification, such as internal-combustion engines, some textile machinery, and electrical machinery, deserve separate treatment, but as there were over 50 different types of machinery imported during the periods investigated and none of these came in in any considerable quantity, most of them will be grouped together for discussion as a single unit. The more important imports in this class are flour and grist mill machinery, mining and oil-well machinery, paper-mill machinery, refrigerating machinery, pumping equipment, laundry machines, elevators, and woodworking machinery. In general, it appeared that the imports were supplementary to American production rather than competitive, consisting in large part of special articles, such as diamond-polishing wheels, for which the world demands are small and supplied by only one or two manufacturers. Exclusive of electrical machinery, the various kinds of machinery are being grouped into 23 surveys, of which 10 were completed in manuscript form and 7 were under way at the end of the fiscal year.

Electrical machinery and supplies have also presented difficulties in classification, the various articles being included under several paragraphs in different schedules of the tariff act of 1913. While

foreign competition in the United States has not been very serious in the past, developments in the electrical trades in several European countries and in Japan after the outbreak of the war seem to warrant careful study of these industries. One important feature of the situation is found in American underwriters' specifications which eliminate many foreign manufactures. The investigation of these products is being conducted with the cooperation of the joint tariff committee of the Electrical Power Club and of the Associated Manufacturers of Electrical Supplies, representing 275 concerns which furnish from 85 to 95 per cent of the total output of electrical apparatus and supplies in the United States. Conferences have established the fact that the electrical industry must be content with broad, general classifications for tariff purposes and can not hope to specify in full detail the multitude of commodities involved. It is believed that in this instance tariff consideration must of necessity be directed to general competitive industrial factors rather than directly upon production costs. Statements are being obtained from the entire industry showing the labor and the material factors in production costs, with the idea of ultimately classifying electrical commodities in groups having like labor-material costs. These data are being digested by representatives appointed by the industry and as soon as possible will be available for the surveys which will be prepared by the commission. Valuable data as to British wages, output, and competitive conditions in the various branches of the electrical trades were obtained during the year by the commission's special agent in England.

The study of hardware, including under this designation most of the more highly finished manufactures of metal, is fairly well advanced. A total of 65 surveys is projected under this group, of which at the end of the fiscal year 41 were completed and 5 were under way. Most of those not yet begun will deal with commodities which lie on the border line of iron and steel manufactures. A wide range of articles is included in certain of these surveys as, for example, that on "manufactures of wire." It is possible that further subdivision may be ultimately desirable, but efforts are now being directed to cover the whole field with the staff available, and this demands the grouping of as many commodities in each unit as is compatible with the major divergences in uses and competitive conditions. In the preparation of surveys on the highly manufactured products difficulties have been encountered in obtaining satisfactory statistics. For articles specifically mentioned in the tariff acts, import statistics are published by the Department of Commerce, although comparable export statistics are often not reported. The chief difficulty, however, has been due to the lack of production statistics, many of the hardware items not being specified in the Census of Manufactures, or in the statistics previously compiled by the hardware manufacturers themselves. It has been necessary for the commission to gather production data for a large number of these articles by means of questionnaires.

In no part of the tariff act has the need for systematic reclassification been more apparent than in the case of the various finished and semifinished products of iron and steel. These products are grouped in various paragraphs with no relation to the stage of manufacture, competitive position, or uses. Between 30 and 35 survey units are

planned for this section of the schedule and of these 18 were completed and 2 were under way on July 1. In addition to these surveys and as a guide in their preparation, the commission is studying the possibility of a complete reclassification of the whole range of products commonly produced in steel works. The structure of this reclassification has not as yet been determined but, so far as the regular survey work is concerned, it follows the plan of grouping the products according to their degree of advancement, starting from pig iron as a base and showing the amount of labor, material, and fuel expended at each stage of production. Cost statements have been received from producers and the data are being assembled to show the average cost of each step in advancement of the more highly finished products. A study of foreign tariffs on iron and steel discloses so many anomalies in their tariff treatment that little assistance can be obtained from that quarter, although the French classification of alloy steels and certain paragraphs in the Canadian tariff are more definite than the distinctions in the present American tariff. Price differentials since the war have not been maintained with reference to production costs nor according to competitive conditions. The classification is further complicated by the matter of processes and, especially, by the rapid growth in the use of alloy and other special steels since the tariff act of 1913 was framed. The increased use of the electric furnace in steel manufacture has introduced new factors not considered in previous tariff legislation.

Ferro-alloys.—During the World War there was a rapid development of the ferro-alloy industries of the United States. These industries are engaged in the manufacture of various combinations of iron and certain other elements, especially rare metals. The ferro-alloys are used in steel manufacture as scavengers and as alloying agencies. As scavengers they deoxidize the molten metal, doing away with so-called blowholes and making steel purer and stronger, and as alloys they impart to the metal certain desired qualities such as toughness, hardness, and elasticity. The most important of the ferro-alloys are ferromanganese, spiegeleisen, ferrosilicon, ferrochrome, ferrotungsten, and ferrovanadium. The use of ferro-alloys is of increasing importance in the production of steel.

Prior to the war the ferro-alloys used in this country were for the most part imported. With the outbreak of hostilities in Europe, especially after the United States became involved in the struggle, importation declined and domestic manufacture increased. Since the signing of the armistice importation has been renewed and domestic manufacturers are now facing considerable competition from abroad.

The Tariff Commission has undertaken a special investigation of the ferro-alloy industries of the country. Cost figures were secured from the leading producers of ferromanganese, ferrosilicon, ferrochrome, and ferrotungsten. The figures with reference to the first three have been so tabulated as to show the average cost per unit of product for the country in the period succeeding the armistice and how much of this cost is traceable to raw material, fuel, electric power, labor, repairs and maintenance, and general overhead charges. In the case of ferrotungsten the raw material constitutes the greater part of the cost and this has been tabulated and averaged for report-

ing countries. A special agent of the commission, who was sent to England in 1919, gathered data with respect to conditions of production abroad.

During the spring of 1920 a field investigation of the northern part of the country extending as far west as Chicago was undertaken, and in the summer it was extended to the Pacific coast. The purpose of this field investigation was to secure accurate information concerning the industrial situation, production, prices, investments in ferro-alloy manufacture, and general competitive conditions. In gathering material not only plants of ferro-alloy producers were visited, but also those of the users of ferro-alloys.

Most ferro-alloys are made in electric furnaces, and in the case of some the price of electric power is a large item in the total cost of manufacture. Rates for power, especially hydroelectric, were obtained from leading companies at Niagara Falls and on the Pacific coast. Information concerning rates in Norway and France was secured as well as the charges made to various ferro-alloy manufacturers in Canada.

Unprinted surveys of the following commodities in Schedules C and N are in the files of the Tariff Commission:

COMPLETED SURVEYS—SCHEDULE C.

Aluminum:	Files, file blanks, rasps, and floats.
Hollow ware.	Gold leaf.
Ingots.	Grit, shot, and sand if iron or steel for use
In leaf.	as abrasives.
Rolled products.	Hooks and eyes.
Antimonial lead.	Iron and steel antifriction balls, ball
Antimony metal.	bearings, and roller bearings.
Argentine, albata or German silver, un-	Iron and steel plates:
manufactured.	Boiler plate.
Automobiles and parts not including tires.	Strips, n. s. p. f.
Axles and parts, and forgings for.	Lead:
Bicycles, motorcycles and parts, not in-	Metallic.
cluding tires.	Manufactures of.
Bottle caps, collapsible tubes, and	Ore.
sprinkler tops.	Machine tools.
Brass rolling mill products.	Monazite sand and thorite.
Bronze powder, brocades, flitters and	Needles.
metallics, bronze or Dutch metal and	Nickel, nickel oxide, and alloys.
aluminum in leaf.	Nippers and pliers.
Buckles of iron or steel.	Nuts, washers, bolts, hinges, spiral nut
Chains:	locks, etc.
All kinds, n. s. p. f.	Penholders, fountain pens.
Sprocket and machine.	Pens.
Copper: Rolled products.	Pins:
Cutlery:	Bonnet.
Pen and pocket knives.	Hair.
Razors, scissors, and shears.	Hat.
Swords and sword blades.	Safety.
Table and other cutlery.	Shawl.
Enamel ware.	Pyrophoric alloys.
Ferro-alloys:	Quicksilver.
Chrome and ferrochrome.	Railway fishplates and splice bars.
Ferrophosphorus.	Saws.
Ferrosilicon.	Silver leaf.
Ferrotitanium.	Silverware, plated and sterling.
Minor ferro-alloys.	Snap fasteners.
Molybdenum and ferromolybdenum.	Steam locomotives.
Tungsten and ferrotungsten.	Steel ingots.
Vanadium and ferrovanadium.	Steel wool or steel shavings.

Structural shapes, unfabricated:

Angles.
Beams.
Car truck channels.
Channels.
Columns and posts.
Deck and bulb beams.
Girders.
Joists.
Thorium, oxide and salts of, gas mantle, scrap, etc.
Tinplate, terneplate, taggers tin.
Tinsel wire, lame or lahm, tinsel fabrics, toys, etc.
Type metal and types.
Watches and clocks and parts thereof.
Wire:
Miscellaneous manufactures of.

Wire—Continued.

Round iron and steel.
Wire heddles and healds.
Wire rope and strand.
Woven wire fencing and poultry netting.
Wire rods, rivet, screw, fence, nail, and other.
Wood screws.
Wrought iron:
Bar iron.
Muck bars.
Round iron in coils or rods.
Square iron.
Zinc:
Dust.
Metallic.
Ores.

SURVEYS UNDER WAY—SCHEDULE C.

Anchors, iron and steel.
Anvils.
Blacksmiths tools and track tools, n. o. p. f.
Card clothing.
Cast iron:
Hollow ware.
Pipe.
Other, n. s. p. f.
Castings:
Malleable iron.
Steel.
Cylindrical tanks and vessels, n. s. p. f.
Embroidery and lace-making machines.
Fabricated structural shapes.
Firearms.
Fishing tackle.
Forgings, iron and steel.
Galvanized and tinned wire.
Galvanized plates, strips, hoop and band, and scroll iron, sheets and plates composed of two or more metals in layers formed by rolling, etc. Sheets and plates further advanced than hot rolled, n. o. p.

Galvanized sheets.
Hoop, band, or scroll iron, n. o. p., and barrel hoops.
Iron and steel sheets; plain, corrugated, or crimped, saw plates, skelp.
Mill shafting.
Pipes and tubes, n. s. p. f.
Printing presses and other engines.
Rivets and studs, and steel points for nonskid tires.
Stamped metal shapes.
Steel bars, tapered or beveled.
Steel engraved plates, stereotype plates, etc.
Telegraph, telephone, and other insulated cables.
Tool steel, substitutes for.
Umbrella and parasol ribs, stretchers and tubes.

SURVEYS UNDER WAY—SCHEDULE N.

Percussion caps, cartridges, and cartridge shells. Mining, blasting, and safety fuses.

SCHEDULE D: WOOD AND MANUFACTURES OF.

Much work has been done on the lumber industry. Visits have been made to camps and mills and conferences held with representatives of the industry in regard to problems confronting them. A report on the result of this work is as yet only in preliminary form. A survey on so much of paragraph 647 as relates to logs and sawed lumber other than cabinet woods is near completion. The other items in paragraph 647 are of minor importance.

It was found that in the lumber industry costs of production differed greatly as between mills and camps producing essentially the same products. It follows that the free admission of lumber affects some lumbermen much more than it does others. When the industry

is considered as a whole the ability of American lumbermen to meet Canadian competition—Canada being our most important competitor—appears to be well established. Indeed, while there is considerable difference of individual opinion, the prevailing demand appears to be not so much for protection as for reciprocity. Canada at present imposes a duty on American lumber above the rough stage, while we admit free of duty lumber up to the stage of being dressed on both sides and tongued and grooved. The desire is for free access to the Canadian market rather than for exclusion of Canadian lumber from the American market.

The loggers, as independent from the lumber manufacturers, have a tariff problem of their own. Logs as well as lumber are admitted free of duty, and American lumbermen purchase a considerable portion of their supply in Canada. British Columbia permits the free export of logs cut from privately owned lands, but imposes a tax or embargo on logs cut from Crown (i. e., Government-owned) lands. It is, however, in the power of the governor in council temporarily to remove these restrictions, and whenever an excess of logs accumulates he is pressed by the Canadian loggers to do so. The intermittent export of logs under such conditions is disorganizing to the American log market and operates disadvantageously to American loggers. On this ground they advocate a duty on logs.

Lumbermen are coming to view with more and more concern the depletion of American forests and are uniting in an energetic campaign for forest conservation. Just now the chief emphasis is on fire prevention. The West Coast Lumbermen's Association has adopted a forest-conservation policy harmonizing with the policy of the United States Forest Service. Substantial progress, especially in fighting fires, is being made.

Pulp wood (paragraph 649).—A survey has been completed on wood pulp. The production of wood pulp is an important domestic industry, the output in 1918 being 3,313,861 tons valued at \$174,-579,645. It presents no important tariff problems, but it does present an important production problem. For the last four years the domestic output has been nearly static, in spite of a rapidly increasing demand as shown by the increasing consumption of paper. The cause of this stagnation in the wood pulp industry, as well as its allied industry, the manufacture of paper, is the depletion of pulpwood forests in the United States and the embargo imposed by Canadian Provinces upon the exportation of pulp wood. The American mills, located chiefly in the northeast portion of the country, and committed to that location by heavy capital investment, are unable to obtain raw material in sufficient quantities to meet the increasing demand. American capital which would otherwise be forthcoming is invested in pulp and paper mills in Canada. The problem may eventually be solved by (1) some reciprocity arrangement with Canada, (2) reforestation, (3) utilization of pulpwood forests in the Pacific northwest and in Alaska, (4) the discovery of a substitute for wood in the manufacture of pulp for paper.

Surveys have been completed on paragraphs 168, 169, and 170 (briar wood, cabinet woods, and posts, poles, and railroad ties). Surveys are approaching completion on the remaining paragraphs in Schedule D (paragraphs 171 and 172, barrels, boxes, and shovels; paragraphs 173 and 648, rattan and willow; paragraph 174, tooth

picks and skewers; paragraph 175, porch and window blinds and screens; and paragraph 176, furniture). None of the items in these paragraphs appears to offer any pressing tariff problem, though there are minor tariff problems in the case of briar wood, cabinet woods, and willow ware.

SCHEDULE E: SUGAR, MOLASSES, AND MANUFACTURES OF.

A report on "Refined Sugar: Costs, Prices, and Profits," based on data up to and including 1919, has been issued.

The report brings out the fact of wide variation in the costs of refining by different refineries. These differences are shown to have existed not only during the disturbed conditions of the war but also in prewar years. Since the price received for refined sugar is fixed by market conditions and does not vary greatly for different refineries, these differences in costs cause profits to vary widely among the refineries, whether they be computed either per ton of sugar refined or as a percentage of capital invested. In one year net returns varied among the refineries from a loss of 0.172 of a cent per pound to a profit of 0.826 of a cent.

In regard to the high price reached by sugar during the year 1920, it is shown that, while undoubtedly there was hoarding and profiteering which exaggerated the result, yet the basic cause was a real shortage of sugar which afforded the occasion for hoarding and profiteering. Though the strength of demand was increased, the world output was some 2,000,000 tons below the prewar output. The reduction in output occurred only in beet sugar, for the output of cane sugar actually increased. From 46 per cent of the world's output beet sugar declined to 26½ per cent.

An analysis of costs, prices, and profits over a series of years from 1880 to 1919 shows that over short periods of time attempts at monopoly have had considerable effect upon profits, but that changes in the "net protection" granted to refiners through the tariff have had little or no direct effect and have only influenced profits indirectly where they made possible a higher price during periods of monopoly.

Profits in 1917 are shown to have been much above normal. The effect of Government price regulation in 1918 is shown in the reduction of profits to an average but little above the prewar level. Profits under Government regulation in 1919 were again large, though not quite so large as in 1917, but this price was fixed as a provision for a longer duration of the war.

The salient features of Government control of prices and distribution are also given in outline.

Schedules have been sent to manufacturers of cane sugar in Louisiana, Hawaii, Porto Rico, Cuba, and the Philippine Islands, and to beet-sugar manufacturers in the continental United States. It is the intention of the commission to issue during the coming year another report on costs of manufacture in the sugar industry, bringing tables and diagrams up to date, and discussing the development of the industry since the signing of the armistice.

SCHEDULE G: AGRICULTURAL PRODUCTS.

Tariff problems in relation to American agriculture, with a few notable exceptions, such as sugar, wool, lemons, and rice, are of comparatively recent development. Even before the World War our imports of foodstuffs, when coffee, tea, and sugar are included, exceeded exports. But in the great staple crops of this country foreign competition is as yet relatively unimportant, though the volume of imports is increasing. It is mainly in connection with the minor and more intensively cultivated agricultural products that tariff problems have arisen. While a part of the present foreign competition is temporary in character, and grows out of the abnormal rates of exchange and the disturbances in the European markets, yet a large part is attributable to more permanent causes.

AGRICULTURAL STAPLES AND THE TARIFF.

The commission has in process of printing a report on six of the chief agricultural staples, viz, wheat, oats, barley, flaxseed, hay, and potatoes. Incidental consideration is given certain products manufactured from them, such as wheat flour, oatmeal, linseed oil and oilcake, and barley malt. These six commodities occupy more than half the area in field crops. With the inclusion of cotton and corn about 94 per cent of the cultivated area would be represented. But of cotton and corn the United States produces about twice as much as the rest of the world combined, and in the case of these there is no important tariff problem.

Wheat has been primarily a frontier crop. In the older regions its cultivation has lost ground to more intensive types of agriculture. The national supply has been maintained chiefly by the new lands that were successively brought under cultivation. Temporarily, at least, the drift away from wheat production has been arrested, because the World War has eliminated for the present the surplus of Russia and Rumania, which have been two of the largest exporting countries.

The relatively small but increasing imports of oats originate in Canada and move to the North Atlantic States. The domestic trade in oats exceeds in volume the entire international trade of the world; and the domestic market is extremely elastic, and is more affected by conditions in the live-stock industries and by the harvests of substitute and competing feedstuffs than by the importations of oats.

As regards barley, American import duties practically put an end to a former large import trade with Canada. Recent prohibition legislation has nearly eliminated the chief commercial demand for this crop. The great bulk of the crop is now used as a farm feedstuff in regions lying to the north and west of the corn belt. A large export trade in barley and barley malt has developed, and in increasing use is made of barley in various nonintoxicating beverages and in sirups.

Of flaxseed, the United States now imports approximately one-half of its requirements, chiefly from Argentina and Canada. Flaxseed has been a frontier crop, especially favored as a first crop on newly broken sod. (Import duties have not checked the drift of

cultivation away from this crop.) In the present state of the international supply the desire for protection through the tariff is giving place to the necessities of the important industries which require flaxseed as a primary raw material. No completely satisfactory substitute for this product has yet been developed.

Imports of hay and potatoes are for the most part from eastern Canada and go to the North Atlantic States. It is chiefly this section that Canadian competition in hay and potatoes affects. The imports, though increasing, constitute a small portion of the available supply. There is a countermovement of early potatoes from the United States to Canada, and small shipments of hay are made to western Canada.

DAIRY PRODUCTS.

Surveys have been completed for the various dairy products: whole milk, and cream, condensed, evaporated and dried milk, oleomargarine, and cheese. The limited keeping qualities of whole milk and cream restrict them to a border trade with Canada. But in dried, condensed, and evaporated milk there is an extensive international trade. Imports of these products, however, are far less than exports. In oleomargarine, likewise, foreign competition is unimportant. Of butter, imports come from a large number of countries, among them Denmark, Canada, New Zealand and Argentina. Although a relatively small part of the available supply is imported, foreign butter has occasionally depressed price levels in eastern markets. In part, the imports have been due to a domestic shortage of the better grades and to the abnormal exchange rates. As regards cheese, the great bulk of the domestic production is of the American cheddar type, Swiss cheese being next in importance. Since 1914, because of the cessation of imports from Europe, there has developed a relatively small American production of the fancy types.

VEGETABLE OILS AND FATS.

The oil and fat industries are in some respects in a developmental stage. New uses are being discovered and new processes perfected. Since 1914 the import trade has attained great dimensions. Indirectly the imported oils compete with the dairy industries because of their use in oleomargarine with tallow, and also with the pork-product industries through their use in lard substitutes. Directly, they compete most severely, perhaps, with domestic peanuts and peanut oil. Surveys have been completed for lard, lard substitutes, and for the principal vegetable oils and oil-bearing materials, viz., cotton seed and cottonseed oil, peanuts, peanut oil, soya beans, soya-bean oil, copra, and coconut oil. The greater part of imported oils and oil-bearing materials comes from the Orient.

There has recently been a large increase in competition from the oriental countries in vegetable oils and their raw materials, especially in beans, peas, rice, soya beans, and peanuts. It is at present most severe in beans and peanuts, as the critical food situation in the Orient has curtailed their exports of rice and other foodstuffs. Surveys have been completed for these commodities.

STARCHES AND STARCH MATERIAL.

The tariff paragraphs relating to the different starches and starch materials need readjustment. While for certain purposes each kind of starch is usually preferred, in most of their uses starches are more or less competitive, and price is the determining factor. Some are on the free list and others are dutiable at varying rates. Surveys have been completed for rice flour and rice starch, sago, arrowroot, cassava, tapioca, and cornstarch. The situation in the potato-starch industry was described in a report treating of the domestic potato-product industries, prepared by the commission for, and printed by, the Ways and Means Committee.

FISH, OYSTERS, AND OTHER SHELLFISH.

Work on the fish industries is under way. A survey on canned fish has been completed. Sardines are by far the most important item under this head. Importations consist almost entirely of high-priced and specially prepared European sardines of a different type from those packed in the United States. Only the sardines now produced in California are comparable with European exports.

SURVEYS COMPLETED—SCHEDULE G.

Barley and barley malt. ²	Mushrooms.
Beans, green and dried.	Oats and oatmeal. ²
Beans, canned or prepared.	Onions.
Butter.	Peanuts.
Cacao butter and substitutes.	Peanut butter.
Cheese.	Peanut oil.
Cheese compounds.	Peas, green, dried, or split.
Chocolate cocoa, powdered.	Peas, canned or prepared.
Coconut meat, shredded.	Potatoes. ²
Fish, canned.	Potatoes, dried or otherwise prepared. ³
Flaxseed. ²	Potato flour. ³
Garlic.	Rice, rice flour, and rice meal.
Hay. ²	Soya-bean oil.
Lentils.	Sweet potatoes and yams.
Miso and bean stick or bean cake.	

SURVEYS COMPLETED—FREE LIST.

Arrowroot.	Manila.
Cacao or cocoa, crude.	Milk and cream.
Cassava.	Milk and cream, condensed, evaporated, and powdered.
Coconuts.	Peanut cake.
Coconut oil.	Sago.
Copra.	Sisal.
Copra cake.	Soya beans.
Coffee.	Soya-bean oil cake.
Cotton seed.	Tapioca.
Cottonseed oil.	Tea.
Cottonseed-oil cake.	Wheat and wheat flour. ²
Jute.	

² Prepared for publication as part of report, "Agricultural Staples and the Tariff."

³ Report to Ways and Means Committee entitled "Information Concerning the Domestic Potato Products Industry."

SCHEDULE I: COTTON MANUFACTURES.

Under this schedule a report has been prepared on "Cotton Cloth: Import and Export Trade in Relation to the Tariff," similar in character to that on cotton yarn previously published by the commission. In addition, considerable data were collected for surveys on other items covered by this schedule.

COTTON CLOTH.

Cotton cloth has been one of the most fruitful sources of tariff litigation and the actual size and character of the import trade has been sometimes obscured by the concentration of attention on the interpretation of tariff provisions. An intensive study of the actual imports and exports was therefore necessary to show what the actual effect of the tariff has been.

The purpose of the report now nearly completed is to set forth fundamental conditions affecting the importation of cotton cloths into the United States and to present in form available for ready reference basic data needed for considering the influence of import duties.

Introductory to the report there will be a condensed summary, certain conclusions and recommendations, and a review of tariff legislation. The first chapter gives the definitions and descriptions needed for understanding the text. The second chapter presents and discusses various tables compiled to indicate in concise and convenient form the trend of the import trade in countable cotton cloths so far as recorded in published statistics. In cotton cloths, as in cotton yarns, the United Kingdom is the only large source of our imports, the great bulk of which falls under the advanced classification. Similar data and discussions follow relative to special cloths, such as pile fabrics, filled and coated fabrics, and Jacquard figured upholstery fabrics, which are specially provided for in the tariff act.

Chapter IV is an intensive study of the exact nature of imported cotton cloths; it contains facts heretofore not generally known and is of special importance in showing the cloths that would be affected by tariff changes. Imported cloths have been divided in this report into 24 classes and a section devoted to each; in addition to a detailed description of the various fabrics, there are discussions of the conditions and limits of competition. The first of these sections deals with piece-dyed linings, largely venetians, which in prewar times were the largest variety imported. During the war domestic production of venetians developed rapidly and it now supplies the greater part of the American demand. The second section covers the fine plain goods, such as cambrics, lawns, and organdies. These normally form the second largest imported variety and were mainly in the finished state. In the fiscal years 1919 and 1920 this type of cloth ranked first in quantity with a large proportion in the gray or unfinished state. The conditions which brought about these changes in the import of fine plain goods affected in a similar manner, but to a smaller extent, many of the less important groups. Under the influence of abnormal domestic and export demands, domestic market prices rose very rapidly during 1919. Foreign prices were rising less

rapidly with the result that the unusual profits from importing such goods induced regular importers to buy beyond their actual requirements; in addition, many new and inexperienced firms were attracted to this business. The result was a sharp rise in the volume of imports, but with the subsequent increase in British prices to the American levels, in the early part of 1920, and the fact that many of the cloths imported on speculation proved to be below the high standard of prewar imports, importers found it difficult to dispose of their purchases. In the fall of 1920 there were still large stocks in bonded warehouses in New York and attempts are being made to induce the British to accept cancellations on unfilled portions of orders.

Cotton cloth imports are normally not directly competitive with cloths of domestic origin. In general, they consist partly of cloths which are above the usual range of domestic fabrics in the fineness of yarns used or in the quality of texture or finish and partly of novelties and new designs which are produced in small amounts of any one variety. Fine ply-yarn voiles are an important import, as the domestic competition is limited to the output of two or three mills which use imported yarns.

Chapter V shows the nature of the cloths supplied to the United States by different countries. The United Kingdom is the main source; its largest shipments were formerly venetians, but recently have been gray cambrics, muslins, and voiles, with smaller amounts of other goods, such as fine ginghams and shirtings, piques, and Bedford cords. France ships fine lawns and novelty dress goods; it formerly ranked second in our import trade, but has not yet regained the trade lost during the war. Switzerland, which now ranks second, formerly supplied permanent-finish organdies and dotted swisses; in addition thereto, it has recently shipped fairly large amounts of gray cambrics, muslins, and voiles. Imports from Japan are almost entirely of crêpe for men's shirts; imports increased during the war but have since declined. In prewar times Germany and Austria supplied fancy dress goods and coarse yarn colored goods. Imports from other countries are negligible.

Chapter VI, an exposition of the cloth export trade of the United States, emphasizes the important fact that in every year since 1875 exports have largely exceeded imports. During the 55 years, 1821 to 1875, inclusive, the balance of trade in countable cotton cloths was against the United States, totaling \$427,912,903, whereas in the 45 years from 1876 to 1920, inclusive, the balance of trade was in favor of the United States, totaling \$906,775,614. The overshadowing importance of the export trade makes it advisable to show in detail the nature of the American cotton cloths which compete abroad, as well as the progress that has been made in various markets. Prior to the World War the predominant feature of our export trade in cloth was the shipment of coarse gray sheetings and drills to China, but subsequent exports have been much more widely distributed and embrace a wider range of fabrics, including some very fine and fancy goods. The exportation of voiles made of single 50s yarns is particularly striking. In the decade 1911-1920 the main purchasers of American cotton cloth have been, in relative order, the Philippine Islands, Cuba, China, Central America, Canada, Colombia, Mexico, Haiti, Argentina, Aden, British West Indies, and Chile. In the fiscal year 1920 exports of countable cotton cloths attained a new

record, with 867,292,647 linear yards, valued at \$211,937,783. In the same year imports of cotton cloth amounted to 119,482,121 square yards, valued at \$40,313,983, which was a record as to value, but in quantity was exceeded in several of the years prior to the Civil War and also in 1866.

Chapter VII is a discussion of the logical adjustment of tariff duties on cotton cloths. After showing the relationship of the basic cloth factors, that is, the average yarn count, the threads per square inch, and the weight, the conclusion is drawn that the most logical standard for assessing progressive rates of duty, either ad valorem or specific, is the official average yarn count ascertained, as at present, by the "straight line" method of computation from the threads per square inch and the weight. The system of differentials for various stages of advancement in manufacture is treated in detail. Attention is called to the effect of certain legal interpretations of the tariff wording, such for instance as the extension of the term "upholstery goods" to admit at 35 per cent (under paragraph 258) nets which had previously been dutiable at 60 per cent (under paragraph 358). Attention is also given to certain inequalities in the tariff itself: for instance, the high duties on cotton damask as compared with many other Jacquard fabrics of much finer yarns and larger proportionate labor costs. It is recommended, among other things, that all paragraphs relating to cotton cloths be contiguous and that the phrasings be clarified and coordinated. The chapter closes with a tabular statement showing, under each of the last five tariff acts, the average annual imports and rates of duty, specific and ad valorem.

Part I of the appendix deals with international trade in cotton cloth and discusses the relative importance of the United States. The United Kingdom still ranks as the main cloth supplier of the world, although she has lost some ground to Japan and the United States in recent years. It is shown that in the calendar year 1919 American exports of cotton cloth averaged in price less per yard than the British, which is a reversal of the condition obtaining in 1913; as American exports are now of a higher average yarn count than at the earlier date, this was significant of a relatively greater increase in British prices. It is also shown that although the United States is a comparatively small importer of cotton cloth, its purchases rank among the highest in average price per yard, indicating that the demand is distinct for fine and fancy fabrics. A consideration of potential sources of imports tends to show that the United Kingdom will, in the future as in the past, be the only country from which substantial imports into the United States can be expected.

Part II of the appendix compares American and foreign import duties on cotton cloths, and gives suggestions with respect to the framing and phrasing of future tariff provisions. It shows the policies adopted by various countries, and the relative height of their tariffs, using certain staple cloths as illustrations. Attention is directed to the divergent treatment accorded specialties and cloths advanced in manufacture.

Part III contains various price data, and Part IV relates to cotton mill profits and capitalization.

Part V consists of abstracts of leading decisions of the courts, the Board of General Appraisers, and the Treasury Department, relating to cotton cloths.

Other unprinted studies of commodities embraced in Schedule I relate to:

COMPLETED.

Clothing, ready made, and articles n.s.p.f.	Cotton waste.
Collars and cuffs.	Cotton wearing apparel, total.
Corsets, not ornamented.	Cotton yarn.
Cotton-and-silk cloths.	Filled and coated cloths.
Cotton cloth.	Raw cotton.
Cotton gloves.	Tracing cloths.
Cotton handkerchiefs.	Waterproof cloths.
Cotton sewing thread.	

UNDER WAY.

Belting for machinery.	Cotton small wares.
Blankets and quilts.	Cotton waste advanced in manufacture.
Cotton card laps, sliver.	Jacquard figured manufactures of cotton.
Cotton chenille goods.	Jacquard figured upholstery goods.
Cotton knit goods (general inclusive).	Table damask.
Cotton hosiery.	Towels and bath mats.

SCHEDULE J: FLAX, HEMP, JUTE, AND MANUFACTURES OF.

Considerable progress has been made in collecting data on the various vegetable fibers and manufactures included under this schedule and related paragraphs of Schedule N and the free list. Work on a substantial number of surveys has been completed; several are in process of completion; and a special report on "Vegetable Floor Coverings," dealing with several paragraphs in Schedules J, K, and N will soon be ready for publication.

A special effort has been made to extend the number of completed surveys and to accumulate data for the remainder. Some of these, such as gill nettings, flax measuring tape, and bags and sacks, were expanded to include similar goods made of cotton (Schedule I). Owing to the sharp divergence of interest and opinion relative to burlap bags and sacks (par. 281), comprehensive data were secured by making a direct canvas of manufacturers, importers, and exporters. Statements relative to the tariff were filed by numerous manufacturers of these goods and also by an association of firms specializing in second-hand bags.

Following a hearing given by the commission in 1919 to manufacturers of grass and "fiber" (paper) rugs and the filing of a printed brief by counsel of their association, a special investigation of this industry and trade was undertaken early in 1919 and is now approaching completion. The manufacturers contend that Japanese straw rugs, which have a superficial resemblance to domestic grass rugs of the "Crex" type, but which are composed of straw crushed only between the joints, should not be classified under paragraph 272 as floor coverings of vegetable substances, as at present, but under paragraph 273 as floor coverings of vegetable fibers. They contend also that higher duties should be imposed. The forthcoming report will include detailed data relative to the growth of the industry; methods, production, consumption, imports, costs, prices, and profits. This report will include chapters on jute floor coverings (par. 273 of Schedule J), rag rugs (par. 302 of Schedule K), and cocoa mats and matting (par. 371 of Schedule N). Linoleum and oilcloth are reserved for a separate report.

Studies in this schedule completed and in progress relate to:

COMPLETED.

Adhesive sheathing felt. Burlap bags and sacks (including also cotton bags). Cables and cordage. Flax. Flax, hemp, and ramie yarns. Flax measuring tapes. Gill nettings.	Hemp. Henequen. Hydraulic and flume hose. Jute. Kapoc. Manila. Oakum. Sisal.
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UNDER WAY.

Binding twine. Cotton bagging (jute). Jute burlaps. Linen collars and cuffs.	Linen wearing apparel. Linoleum and oilcloth. Various minor vegetable fibers.
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SCHEDULE K: WOOL AND MANUFACTURES OF.

Under this schedule a special investigation of the wool carpet and rug industry was undertaken; the results are now in process of compilation and will soon be published.

WOOL CARPETS AND RUGS.

The provisions of the tariff on wool carpeting are of interest for several reasons. A larger number of tariff paragraphs are devoted to this subject than to almost any other; the rates of duty vary markedly between the different types, without any published data as to reasons therefor; some terms used in the law, such as wool Dutch carpets, druggets, and bockings, are obsolete in the trade; the phrasing of the paragraphs has led to extended litigation; and the most distinct line of demarcation, that between machine-made and handmade articles, is not positively drawn.

The above features of the tariff law have to some extent directed the course of the investigation. The report will describe the types and forms of the finished product and will discuss domestic and foreign manufacture, with special emphasis on the mechanical equipment of the industry, its organization, and labor. Costs of production were secured from domestic manufacturers of the various types of carpeting, and there are also included domestic and foreign price data. For machine-made rugs and carpets a comparison is drawn not only between the American and the British industries, but also between the different types, such as Brussels, Wilton, Axminster, chenille Axminster, tapestry, velvet, and ingrain, based on differences in weaving, and between the different forms, such as carpets (roll goods), mitered, seamed, and seamless rugs, into which fabrics may be made up. These comparisons are extended into the study of costs and prices in order to furnish the necessary data for enacting tariff legislation which shall differentiate the various types and forms of machine-made goods. The report shows that the great bulk of the articles imported under the head of wool carpets and rugs consists of oriental handmade rugs.

Other unprinted studies of commodities embraced in Schedule K relate to:

COMPLETED.

Scoured wool (free list). Wool blankets. Wool flannels. Wool tops and roving, partially manufac- tured wool and hair, n. s. p. f.		Wool waste materials and rags (free list). Wool yarns.
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UNDER WAY.

Carpets and rugs of wool. Dress goods.		Wool cloths.
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SCHEDULE L: SILKS AND SILK GOODS.

Under Schedule L the commission has in course of preparation a special report on "Silk and Manufactures and the Tariff," which is intended to be an intensive study of the domestic silk industry with particular reference to its international competitive position. Data for this work have been secured from many sources, including domestic and foreign manufacturers, importers, customs officials, and others. The compilation of the data and writing of the text are under way and the report is expected to be ready for publication early in 1921.

As at present planned, Part I of this report will cover all branches of silk manufacture. For the industry as a whole it will trace and account for the growth from 1850 to the present and will indicate the change in world position brought about during the period. It will discuss the sources and problems of raw material supply. For specific branches of the industry it will trace the development, estimate the present world position, and show the geographic distribution in the United States. Part II will describe analytically the organization and labor problems of the broad-silk, ribbon, and thrown-silk industries. Part III will be devoted to a detailed comparison of technique, products, and as far as possible of costs in the broad-silk industry in America, Europe, and Japan; an analysis of imports and exports; and a careful examination of the tariff problems involved. From 15 domestic broad-silk manufacturers data as to construction and cost of manufacture of more than 100 fabrics have been secured. From Europe and Japan comparative data as to throwing rates, dyeing rates, and wages have been obtained. Other sections of this report will deal with the technical development, costs of manufacture, and tariff problems in the thrown-silk, spun-silk, and ribbon industries. Cost computations have been secured from domestic manufacturers in each of these lines. It is probable that a section will also be added to cover plush and velvet manufacture.

Unprinted studies embraced in Schedule L relate to:

COMPLETED.

Broad silks. Hatters' plush. Raw silk and silk waste. Sewing silk. Silk bolting cloth.		Silk partially manufactured. Silk pile fabrics. Silk ribbons. Spun silk or schappe. Thrown silk.
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UNDER WAY.

Artificial silk.	Silk small wares.
Manufactures of silk, n. s. p. f.	Silk wearing apparel, all other.
Silk handkerchiefs.	Silk wearing apparel, knit goods.

SCHEDULE M: PAPER AND BOOKS.

Surveys have been prepared on print paper, wood pulp, wrapping paper and paper boards. In the industries producing these commodities the matters of most pressing importance are connected with the shortage of newsprint paper and the approaching exhaustion of the American supply of pulp wood.

The newsprint shortage was most acute in the early months of 1920. Prices rose to unprecedented levels and some of the country papers were threatened with extinction. In a strict sense "shortage" is not the right term to apply to the trouble. That is, the supply of newsprint has been steadily increasing and 1920 shows a normal increase over 1919. The maladjustment came from the side of demand. The revival of industry following the war manifested itself in tremendous campaigns of advertising. The great metropolitan papers usually obtain their supply of newsprint by contract direct from the manufacturers, but such was the demand for advertising space that, though raising their rates, urging their patrons to condense, and in some cases refusing advertising matter offered them, they were obliged to exceed their contract supply and invade the "spot market," i. e., purchase from jobbers, brokers, and manufacturers at the "going" price without previous contract. The country press had relied almost exclusively on the spot market, in which the quantity of paper available is small in comparison to a moderate increase in the consumption of the great city papers. Hence, the invasion of this market by the city dailies forced prices to unheard of levels. These prices were disastrous to the country papers which relied exclusively on the spot market but did not so greatly affect the great city papers whose average price for paper was only moderately increased because of the excessive price paid for a small portion of their supply. Under the pressure of demand contract prices also were materially advanced, though they did not approach the levels reached in the spot market.

The increase in the demand for newsprint in 1920 is only the climax of a movement that has been going on for many years. In 1880 the per capita consumption of newsprint in the United States was 3 pounds; in 1894, 9 pounds; in 1919, 33 pounds; and in 1920, it promises to be 35 pounds. This is per capita consumption, the absolute consumption has, of course, increased at a much more rapid rate. Under this demand the pulp wood forests in the United States are rapidly disappearing.

Herein lies the problem of chief international importance. We are becoming increasingly dependent upon foreign sources for newsprint. From virtual independence early in the century the situation has so changed that in 1919 two-thirds of the newsprint consumed in the United States was from trees grown in some other country—virtually in Canada. Canada has never imposed any restrictions upon the export of pulp wood cut on privately owned lands nor upon the export of wood pulp or paper. The great bulk of the pulp wood, however, is

on the Crown lands, and on the export of such pulp wood several Provinces lay an embargo. Some American mills, anticipating the exhaustion of the domestic supply, had secured licenses to cut on large areas of Crown lands in Canada prior to the issue of the embargo. These mills are now in a difficult situation.

Remedies suggested are (1) negotiation with Canada to induce her to lift the embargo. Such was the plan embodied in the Underwood resolution. (2) A forestry program looking to the reforestation of the cut-over lands in New England and New York. (3) Utilization of the pulp wood supplies in the Pacific northwest and in Alaska. (4) The utilization of some substitute for pulp wood, as bagasse, for a part of the supply.

From interviews with manufacturers in the pulp and paper industry it developed that in their opinion there was no pressing tariff problem. Some manufacturers foresaw potential competition of a most active sort from certain European sources in the finer grades of paper and certain paper specialties.

Other unprinted surveys are as follows:

COMPLETED.

Fine paper and envelopes. Paper board.	Printing paper. Wrapping paper.
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UNDER WAY.

Blotting paper. Building paper. Crêpe paper. Hanging paper.	Paper stock. Tissue paper. Writing paper.
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SCHEDULE N: SUNDRIES.

Surveys of the commodities covered by this schedule have been made as rapidly as their diversity would permit. During the year completed surveys have been prepared for feathers and artificial flowers, masks, moss and seaweed, peat moss, photographic goods, pipes and smokers' articles, straw hats, toys and dolls, and umbrellas and canes. A considerable number of surveys for commodities in this schedule have been completed in connection with work on other schedules under which they are listed in this report.

Unprinted studies of commodities embraced in Schedule N relate to:

COMPLETED SURVEYS.

Art, works of. Beads and spangles. Bristles. Brooms. Catgut. Cork. Dice, dominoes, etc. Emery and emery wheels. Feathers and artificial flowers. Gloves, leather. Hatters' plush. Masks.	Matches. Moss and seaweed. Musical instruments and phonographs. Peat moss. Pencils. Pencil leads. Photographic goods. Pipes and smokers' articles. Rosin, violin. Straw hats. Toys and dolls. Umbrellas and canes.
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SURVEYS UNDER WAY.

Chamois skins.	Hair, curled.
Fans.	Haircloth.
Furs, dressed and manufactures of.	Human hair.
Fur felt hats.	Leather, manufactures of.

Printed studies or reports have been issued on the following subjects:

The Button Industry.* | The Brush Industry.*

COMMISSION LIBRARY.

The library now consists of 2,618 bound volumes and approximately 4,853 pamphlets. Old pamphlets and periodicals were bound together in volumes to the number of 168, while the new volumes added to the collection amounted to 303, making a total of 471 accessions for the year. Two hundred and thirty trade and technical periodicals and Government publications were received regularly, showing an increase of 45 over last year. All of these were circulated in the departments and those of permanent value were kept for binding while those of temporary value were clipped for use in the studies and surveys made by the commission.

The Library of Congress as well as the departmental libraries and the Public Library of the District of Columbia were drawn upon freely for books and periodicals.

Additional wall shelving was installed during the year. This is sufficient to take care of the unbound periodicals but does not relieve the generally congested condition.

The mailing division sent out 28,209 copies of Tariff Commission publications and 56,385 form letters, questionnaires, etc.

FINANCES AND APPROPRIATION.

The appropriation for the commission for the fiscal year ended July 1, 1920, was \$300,000.

The expenditures of the commission from July 1, 1919 to June 30, 1920, were as follows:

Salaries of commissioners.....	\$35,625.00
Salaries of employees.....	185,076.23
Rent of office building.....	10,800.03
Travel and field expenses.....	11,179.76
Foreign investigations.....	8,704.43
Special investigations.....	13,174.00
Books of reference and publications.....	2,424.14
Printing and binding.....	22,125.63
Office equipment, supplies, telephone and telegraph service, maintenance service, and miscellaneous expenses.....	10,890.78
Amount of appropriation.....	<u>300,000.00</u>

* Supply exhausted.

A detailed classification of the personnel of the commission as of June 30, 1920, is shown in the following statement:

Commissioners.....	4
Secretary.....	1
Clerks to commissioners.....	1
Special experts.....	45
Clerks, including stenographers and typists.....	44
Messengers.....	2
Telephone operator and stock clerk.....	1
Skilled laborer.....	1
	99
Total.....	99

Respectfully submitted.

THOMAS WALKER PAGE, *Chairman*
 DAVID J. LEWIS.
 WILLIAM S. CULBERTSON.
 EDWARD P. COSTIGAN.

APPENDIX.

ACT CREATING A TARIFF COMMISSION.

The act of Congress approved September 8, 1916, entitled "An act to increase the revenue, and for other purposes," contains the following provisions establishing the United States Tariff Commission:

TITLE VII.—TARIFF COMMISSION.

SEC. 700. That a commission is hereby created and established, to be known as the United States Tariff Commission (hereinafter in this title referred to as the commission), which shall be composed of six members, who shall be appointed by the President, by and with the advice and consent of the Senate, not more than three of whom shall be members of the same political party. In making said appointments members of different political parties shall alternate as nearly as may be practicable. The first members appointed shall continue in office for terms of two, four, six, eight, ten, and twelve years, respectively, from the date of the passage of this Act, the term of each to be designated by the President, but their successors shall be appointed for terms of twelve years, except that any person chosen to fill a vacancy shall be appointed only for the unexpired term of the member whom he shall succeed. The President shall designate annually the chairman and vice chairman of the commission. No member shall engage actively in any other business, function, or employment. Any member may be removed by the President for inefficiency, neglect of duty, or malfeasance in office. A vacancy shall not impair the right of the remaining members to exercise all the powers of the commission, but no vacancy shall extend beyond any session of Congress.

SEC. 701. That each commissioner shall receive a salary of \$7,500 per year, payable monthly. The commission shall appoint a secretary, who shall receive a salary of \$5,000 per year, payable in like manner, and it shall have authority to employ and fix the compensations of such special experts, examiners, clerks, and other employees as the commission may from time to time find necessary for the proper performance of its duties.

With the exception of the secretary, a clerk to each commissioner, and such special experts as the commission may from time to time find necessary for the conduct of its work, all employees of the commission shall be appointed from lists of eligibles to be supplied by the Civil Service Commission and in accordance with the civil-service law.

All of the expenses of the commission, including all necessary expenses for transportation incurred by the commissioners or by their employees under their orders in making any investigation or upon official business in any other places than at their respective headquarters, shall be allowed and paid on the presentation of itemized vouchers therefor approved by the commission.

Unless otherwise provided by law, the commission may rent suitable offices for its use, and purchase such furniture, equipment, and supplies as may be necessary.

The principal office of the commission shall be in the city of Washington, but it may meet and exercise all its powers at any other place. The commission may, by one or more of its members, or by such agents as it may designate, prosecute any inquiry necessary to its duties in any part of the United States or in any foreign country.

SEC. 702. That it shall be the duty of said commission to investigate the administration and fiscal and industrial effects of the customs laws of this country now in force or which may be hereafter enacted, the relations between the rates of duty on raw materials and finished or partly finished products, the effects of ad valorem and specific duties and of compound specific and ad valorem duties, all questions relative to the arrangement of schedules and classification of articles in the several schedules of the customs law, and, in general, to investigate the operation of customs laws, including their relation to the Federal revenues, their effect upon the industries and labor of the country, and to submit reports of its investigations as hereafter provided.

SEC. 703. That the commission shall put at the disposal of the President of the United States, the Committee on Ways and Means of the House of Representatives,

and the Committee on Finance of the Senate, whenever requested, all information at its command, and shall make such investigations and reports as may be requested by the President or by either of said committees or by either branch of the Congress, and shall report to Congress on the first Monday of December of each year hereafter a statement of the methods adopted and all expenses incurred, and a summary of all reports made during the year.

SEC. 704. That the commission shall have power to investigate the tariff relations between the United States and foreign countries, commercial treaties, preferential provisions, economic alliances, the effect of export bounties and preferential transportation rates, the volume of importations compared with domestic production and consumption, and conditions, causes, and effects relating to competition of foreign industries with those of the United States, including dumping and cost of production.

SEC. 705. That upon the organization of the commission, the Cost of Production Division in the Bureau of Foreign and Domestic Commerce in the Department of Commerce shall be transferred to said commission, and the clerks and employees of said division shall be transferred to and become clerks and employees of the commission, and all records, papers, and property of the said division and of the former tariff board shall be transferred to and become the records, papers, and property of the commission.

SEC. 706. That for the purposes of carrying this title into effect the commission or its duly authorized agent or agents shall have access to and the right to copy any document, paper, or record, pertinent to the subject matter under investigation, in the possession of any person, firm, copartnership, corporation or association engaged in the production, importation, or distribution of any article under investigation, and shall have power to summon witnesses, take testimony, administer oaths, and to require any person, firm, copartnership, corporation, or association to produce books or papers relating to any matter pertaining to such investigation. Any member of the commission may sign subpoenas, and members and agents of the commission, when authorized by the commission, may administer oaths and affirmations, examine witnesses, take testimony, and receive evidence.

Such attendance of witnesses and the production of such documentary evidence, may be required from any place in the United States at any designated place of hearing. And in case of disobedience to a subpoena the commission may invoke the aid of any district court of the United States in requiring the attendance and testimony of witnesses and the production of documentary evidence, and such court within the jurisdiction of which such inquiry is carried on may, in case of contumacy or refusal to obey a subpoena issued to any corporation or other person, issue an order requiring such corporation or other person to appear before the commission, or to produce documentary evidence if so ordered, or to give evidence touching the matter in question; and any failure to obey such order of the court may be punished by such court as a contempt thereof.

Upon the application of the Attorney General of the United States, at the request of the commission, any such court shall have jurisdiction to issue writs of mandamus commanding compliance with the provisions of this title or any order of the commission made in pursuance thereof.

The commission may order testimony to be taken by deposition in any proceeding or investigation pending under this title at any stage of such proceeding or investigation. Such depositions may be taken before any person designated by the commission and having power to administer oaths. Such testimony shall be reduced to writing by the person taking the deposition, or under his direction, and shall then be subscribed by the deponent. Any person, firm, copartnership, corporation, or association may be compelled to appear and depose and to produce documentary evidence in the same manner as witnesses may be compelled to appear and testify and produce documentary evidence before the commission, as hereinbefore provided.

Witnesses summoned before the commission shall be paid the same fees and mileage that are paid witnesses in the courts of the United States, and witnesses whose depositions are taken and the persons taking the same, except employees of the commission, shall severally be entitled to the same fees and mileage as are paid for like services in the courts of the United States: *Provided*, That no person shall be excused, on the ground that it may tend to incriminate him or subject him to a penalty or forfeiture, from attending and testifying, or producing books, papers, documents, and other evidence, in obedience to the subpoena of the commission; but no natural person shall be prosecuted or subjected to any penalty or forfeiture for or on account of any transaction, matter, or thing as to which, in obedience to a subpoena and under oath, he may so testify or produce evidence, except that no person shall be exempt from prosecution and punishment for perjury committed in so testifying.

SEC. 707. That the said commission shall in appropriate matters act in conjunction and cooperation with the Treasury Department, the Department of Commerce, the Federal Trade Commission, or any other departments, or independent establishments of the Government, and such departments and independent establishments of the Government shall cooperate fully with the commission for the purposes of aiding and assisting in its work, and, when directed by the President, shall furnish to the commission, on its request, all records, papers, and information in their possession relating to any of the subjects of investigation by said commission and shall detail, from time to time, such officials and employees to said commission as he may direct.

SEC. 708. It shall be unlawful for any member of the United States Tariff Commission, or for any employee, agent, or clerk of said commission, or any other officer or employee of the United States, to divulge, or to make known in any manner whatever not provided for by law, to any person, the trade secrets or processes of any person, firm, copartnership, corporation, or association embraced in any examination or investigation conducted by said commission, or by order of said commission, or by order of any member thereof. Any offense against the provisions of this section shall be a misdemeanor and be punished by a fine not exceeding \$1,000, or by imprisonment not exceeding one year, or both, in the discretion of the court, and such offender shall also be dismissed from office or discharged from employment. The commission shall have power to investigate the Paris Economy Pact and similar organizations and arrangements in Europe.

SEC. 709. That there is hereby appropriated, for the purpose of defraying the expense of the establishment and maintenance of the commission, including the payment of salaries herein authorized, out of any money in the Treasury of the United States not otherwise appropriated, the sum of \$300,000 for the fiscal year ending June thirtieth, nineteen hundred and seventeen, and for each fiscal year thereafter a like sum is authorized to be appropriated.

IMPORTANT TARIFF ACTS IN THE LAST 50 YEARS.

1. Enacted June 6, 1872, in effect August 1, 1872.
2. Enacted March 3, 1883.
3. McKinley Act. Enacted October 1, 1890, in effect October 6, 1890
4. Wilson Act. Enacted August 27, 1894, in effect August 28, 1894.
5. Dingley Act. Enacted July 24, 1897, and in effect July 25, 1897.
6. Payne-Aldrich Act. Enacted August 5, in effect August 6, 1909.
7. Underwood Act. Enacted October 3, in effect October 4, 1913.

ACTS OF CONGRESS RELATING TO IMPORTS, PASSED SINCE OCTOBER 3, 1913.

- Jan. 17, 1914 (amending act of Feb. 9, 1909; chap. 9, 38 Stat., 275): Importation and use of opium for other than medicinal purposes prohibited.
- June 27, 1914 (chap. 129, 38 Stat., 388, 391): Material purchased abroad, for ordnance for Army, exempted from duty.
- June 30, 1914 (chap. 130, 38 Stat., 392, 399): Material purchased abroad, for ordnance for Navy, exempted from duty.
- December 17, 1914 (see act of Feb. 24, 1919, *infra*; chap. 1, 38 Stat., 785): Importers of opium, coca leaves, or any compound, manufacture, salt, derivative, or preparation thereof, to register and pay tax.
- March 3, 1915 (chap. 76, sec. 2, 38 Stat., 887, 891): Material for Ordnance Department exempted from duty.
- April 27, 1916 (chap. 93, secs. 1, 2, 39 Stat., 56, 57): Provisos to paragraphs 177 and 178, act of 1913, admitting sugar, etc., free after May 1, 1916, repealed.
- June 28, 1916 (chap. 180, 39 Stat., 239): Mexican peas, commonly called "garbanzo," may be stored, cleaned, repacked, or otherwise changed in condition, but not manufactured, and withdrawn for exportation free of duty, or for consumption in the United States upon payment of duty in condition as imported.
- July 6, 1916 (chap. 225, 39 Stat., 345, 350): Material for Ordnance Department exempted from duty.
- September 5, 1916 (joint resolution; chap. 441, 39 Stat., 725): Section 2971, Revised Statutes, amended to permit merchandise to remain in bonded warehouse without payment of duty for exportation to Mexico until commercially practicable to export.
- September 8, 1916 (chap. 463, secs. 402, 500, 501, 502, 600, 800-806, 39 Stat., 756, 783, 793-795, 798-800): Duties on coal-tar products increased; paper paragraphs, 322 and 567, act of 1913, modified; tax on imported wines imposed; and unfair competition forbidden.

- February 14, 1917 (chap. 54, 39 Stat., 909, 913): Material for Ordnance Department exempted from duty.
- March 3, 1917 (chap. 171, secs. 3, 4, 39 Stat., 1132, 1133): Duties on goods to and from Virgin Islands.
- May 12, 1917 (chap. 12, 40 Stat., 40, 65): Material for Ordnance Department exempted from duty.
- August 10, 1917 (Nov. 21, 1918, as amended, chap. 212, sec. 3, 40 Stat., 1045, 1048 infra; chap. 52, sec. 9, 40 Stat., 273, 275): Tick-infested cattle otherwise free from disease may be imported for immediate slaughter.
- August 10, 1917 (chap. 53, secs. 5, 14, and 15, 40 Stat., 276, 277, 281, 282): License necessary for importation of necessaries when found essential for war purposes. (See act of Mar. 4, 1919, infra.) Additional duties imposed on imported wheat to maintain stability of guaranteed prices. Importation of distilled spirits prohibited and importation of malt or vinous liquors prohibited except under license.
- October 3, 1917 (chap. 63, secs. 300, 301, 404, 40 Stat., 300, 308, 314): Taxes on various articles; importation of distilled spirits for beverage purposes or beverage manufacture forbidden.
- October 6, 1917 (chap. 83, sec. 10-12, 40 Stat., 385, 387): Issuance of licenses by Director of Bureau of Mines to import explosives authorized.
- October 6, 1917 (chap. 106, sec. 11, 40 Stat., 411, 422, 423): Importations against public safety declared unlawful.
- October 6, 1917 (joint resolution; chap. 108, 40 Stat., 427): Entry of distilled spirits shipped before September 1, 1917, authorized under bond conditioned upon export within one year.
- February 8, 1918 (chap. 13, sec. 4, 40 Stat., 435, 436): Importation prohibited of any device, improvement, process, equipment, or apparatus based upon the principle, or improvement or change developed in the use of "Garabed."
- May 23, 1918 (chap. 84, sec. 1, 40 Stat., 560, 561): Importation of intoxicating liquors into Hawaii prohibited for beverage purposes.
- July 3, 1918 (chap. 128, sec. 4, 40 Stat., 755, 756): Importation of birds, or parts, nests or eggs thereof, captured, killed, taken, shipped, transported, or carried contrary to Canadian laws prohibited.
- July 9, 1918 (chap. 143, 40 Stat., 845, 873): Ordnance material admitted free of duty.
- August 31, 1918 (chap. 165, 40 Stat., 954): Supplies for American National Red Cross donated abroad exempted from duty until one year after end of war.
- October 5, 1918 (chap. 181, sec. 2, 40 Stat., 1009): President authorized to fix duties on certain war minerals to protect United States from loss on purchases.
- November 21, 1918 (see act Aug. 10, 1917, chap. 52, supra; chap. 212, sec. 1, 40 Stat., 1045, 1047): Importation of intoxicating liquors during the war and demobilization prohibited. (Sec. 2, 40 Stat., 1048): Distilled spirits from Porto Rico admitted for nonbeverage purposes.
- February 24, 1919 (chap. 18, secs., 600, 601, 619, 700, 1006, 40 Stat., 1057, 1105, 1106, 1113, 1117, 1130): Imported distilled spirits subject to tax and warehouse period extended. Perfumes containing distilled spirits subject to tax of \$1.10 per wine gallon as internal-revenue tax. Importation of distilled spirits produced after October 3, 1917, for beverage purposes prohibited. Tax on wines, liqueurs, etc., collectible by assessment instead of stamps. Cigarettes to be packed and stamped like domestic cigarettes. Importation of opium or coca leaves or any compound manufacture, salt, derivative, or preparation thereof, by unregistered person and without specific tax, declared unlawful.
- March 3, 1919 (chap. 99, sec. 2, 40 Stat., 1305, 1308): Ordnance material purchased abroad exempted from duty.
- March 4, 1919 (chap. 125, sec. 6, 40 Stat., 1348, 1351): Continuing in effect provisions of act of August 10, 1917, imposing additional duties on imported wheat to maintain stability of guaranteed prices, to cover crops of 1918 and 1919, and extending application of act to semolina and wheat flour.
- July 11, 1919 (chap. 8, 41 Stat., 104, 125): Material for Ordnance Department exempted from duty.
- October 28, 1919 (chap. 83, 41 Stat. 305, 308, 322): Effect given to prohibition amendment.
- November 19, 1919 (chap. 121, 41 Stat., 361): Control of imports of dyes and coal-tar products continued.
- December 18, 1919: Reciprocal protection of authors' works in the United States and foreign countries, amending sections 8 and 21 of the copyright act of March 4, 1909.
- February 7, 1920: Provision for the lading and unlading of vessels at night and the preliminary entry of vessels. Act of February 13, 1911, amended.

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April 23, 1920: Dividing line between free and dutiable printing paper changed from 5 cents to 8 cents per pound.

May 21, 1920: Fortifications appropriation act. Materials for war ordnance exempted from duty.

May 29, 1920: Legislative appropriation, 1921. Department of Commerce, Bureau of Standards. * * * For the study of the technical problems incidental to the collection of the revenue on sugar and to determine the fundamental scientific constants of sugars and other substances. * * *

May 31, 1920: Appropriation for Department of Agriculture, 1921. Enforcement of the act to prevent the importation of unwholesome tea transferred from the Treasury Department to the Department of Agriculture.

June 5, 1920: Merchant marine act.

