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British Industries

under

Free Trade

ESSAYS BY EXPERTS

Edited by

HAROLD COX

Secretary of the Cobden Club

SECOND IMPRESSION

LONDON

T. FISHER UNWIN

PATERNOSTER SQUARE

1904

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PREFACE

THE object of the present volume is to supply a detailed answer to the question whether British industries have or have not flourished under Free Trade. The volume is necessarily limited in size, and the time allowed for its preparation was not long. It has therefore been impossible to deal with all the industries that might well have been here represented. But the ground covered is sufficiently wide to give an indication of our national industry as a whole, and special care has been taken to include those industries which are often pointed to by Protectionists as awful examples of the policy of free imports. The writers of the following essays are not pedants who are content to mutter exploded shibboleths. They are practical business men, writing of things that they know of their personal knowledge. They are concerned, not with the events of 1846, nor even with the prophecies of Cobden, but with the actual business needs of

to-day. Thus incidentally an answer is furnished to the parrot cry that "conditions have changed since 1846." Of course conditions have changed. It would be strange indeed if fifty years of intense industrial, scientific, and commercial activity had produced no change in the world. But what Protectionists have to prove is that the obvious and wonderful changes in the condition of the world have rendered less valid the arguments upon which the case for Free Trade is based. Those arguments were not the invention of the year 1846, nor even of that great Englishman whose name will always be identified with the repeal of the Corn Laws. Exactly the same principles were expounded by Adam Smith in 1776. They were accepted by Pitt, who, but for the Great War, would probably have succeeded in giving effect to them. They were revived again in the famous Merchants' Petition of 1820, and adopted by Huskisson as the basis of the reforms which he carried out in 1823 and subsequent years. They were boldly proclaimed by Peel in 1842, in 1846, and in 1849. They were emphatically endorsed by the House of Lords, *nemine contradicente*, in 1852. They were acted upon by Gladstone in 1853 and in 1860; by Sir Robert Lowe in 1869; by Sir Stafford Northcote in 1874. They were brilliantly defended by a Radical demagogue in 1885,[1] and soberly justified by a Tory Chancellor of the Exchequer[2] in 1897. They

[1] Mr. Joseph Chamberlain. [2] Sir Michael Hicks Beach.

continued to command at any rate the lip reverence of every English statesman down to the spring of 1903. It is therefore not to the year 1846 that the Protectionists need trouble to hark back; it will suffice if they will deal with the year 1902, and explain how the principles which they then avowed became entirely false six months later.

What then are the principles which Adam Smith taught, and which England some fifty years later began cautiously to practice, and then after a fierce political struggle finally adopted? The main principle, so far as the present controversy is concerned, is this: *That it is impossible to add to the wealth of a nation by preventing the free importation of foreign goods.* This proposition would be self-evident but for the fact that the use of money blinds the average man to the realities of trade. If trade were in appearance, what it is in reality, an exchange of goods for goods, nobody would be so insane as to question the advantage to a nation of freely receiving all the good things that other nations can be induced to send it. But trade has for many centuries in all civilised countries presented the appearance of an exchange of goods against money, and the average man forgets that money is merely a go-between; nor does he perceive that the exchange of goods for money is only half of a transaction which must subsequently be completed by the exchange of money for goods. To realise this essential charac-

teristic of money it is only necessary to try and imagine what would happen if the persons who sold goods were content to keep the money they receive. It is clear that as soon as they had sold all their existing stock they would get no more money, and meanwhile they would be naked and starving amid a pile of useless pieces of metal.

It seems almost infantile to have to remind the reader of these obvious considerations, but such a reminder is not altogether unnecessary when even Cabinet ministers show their ignorance of the real nature of trade. Whatever be the mechanism of trade, whether it be the simple barter of the primitive savage, or whether it be conducted with coins of copper or of silver or of gold, or with bank-notes, or with cheques, or with bills of exchange, under all these conditions trade in its essence always has been, and always must be, an exchange of goods for goods, of one good thing for another good thing. Furthermore, trade is always conducted between individuals.[1] Strictly speaking, there is no such thing as trade between nations. The individual Englishman trades with the individual Frenchman, the Frenchman with a Chinaman, the Chinaman with a Yankee, the Yankee with a Canadian, the Canadian with a Scot, the Scotchman with an Englishman. All these men are each

[1] In the comparatively rare cases where governments engage in trade they act on the same principles as individual trading firms.

seeking their own profit in the exchanges they make. They will find that profit better if left to themselves than if their operations are subject to the control of politicians and bureaucrats, who may be corrupt, and who certainly will be ignorant. But the national wealth is the sum total of the wealth of the individuals composing the nation. It can therefore only be diminished by any system of trade regulation which deprives individuals of the liberty to obtain profit where they can find it best.

Of course wealth is not the only object of national ambition. As Adam Smith long ago insisted, Defence is greater than Opulence. But let us be clear first about the question of wealth. Let us be clear that Protection can only diminish national wealth, and then we can proceed to consider how far it may be desirable to submit to that diminution for the sake of some other national object. The trouble is that the modern Protectionist will seldom define what are the objects which he hopes to attain by a sacrifice of national wealth. Earlier Protectionists were more honest. The mercantilists of the eighteenth century argued that a store of gold and silver was necessary to a nation to serve as a war chest, and they honestly believed that this chest could best be filled by prohibiting the export of coin and bullion, and by trying to force other countries to pay in gold and silver for our goods. Events have shown that they were wrong. Never

has the war chest of England been so full as it was after fifty years of Free Trade.

Again, the Protectionists of the first half of the nineteenth century argued that the existence of a landed aristocracy was essential to the welfare of the nation, and they honestly believed that the aristocracy would perish if the rent of the landowner was not kept up by a tax upon the food of the people. Here again events have shown that they were wrong. The people, freed from a tax upon their food, and freed from the blundering interference of politicians with the business of commerce, have multiplied their factories and warehouses, their offices and shops, and have multiplied their houses and parks and pleasure gardens, to such an extent that the rent of the soil of England now maintains a landed aristocracy probably ten times as wealthy as the aristocracy of fifty years ago.

Another favourite excuse for Protection, repeated at intervals for nearly a century, is the risk to our food supply in time of war. The simple answer is that this risk must be taken, unless we are prepared to reduce our population by at least 50 per cent.; for even when our population was half what it now is our own soil did not provide us with sufficient food. It is a curious way of promoting national greatness to ask a nation of 42,000,000 people to cut themselves down to 21,000,000 for fear that their foreign food supply, which has never yet been interrupted, might, under conditions, which have

never yet been explained, suddenly cease. Yet even if this happy despatch of more than twenty million people had been completed, it would still be arguable that the remaining population would do more wisely to take the remote and imaginary risk of a war against the world, without allies and without neutrals, rather than face the ever-present dangers of an uncertain climate.

Another argument which seems greatly to comfort the neo-Protectionist is derived from the fact that other countries, with rare exceptions, have not yet adopted Free Trade. That is a misfortune for the countries that adhere to Protection, and in a lesser degree it is a misfortune for us, because foreign tariffs, especially when they are frequently altered, add to the difficulties with which the British manufacturer has to deal.[1] But though foreign protectionist tariffs are in some ways inconvenient to us as well as to the countries that maintain them, their existence in no way disproves the Free Trade position, for that position rests upon arguments which would remain true even if all the world rejected them.

To-day we all believe that the earth moves. Was that "dogma" any less true when mankind in the mass rejected it, and when the Inquisition threatened Galileo with death for daring to proclaim it? If we are to abandon our principles because other

[1] On the other hand, when foreign Protection takes the form of "dumping" goods below cost in this country we actually gain by the folly of our neighbours.

countries fail to follow our example, it is not Free Trade alone that will have to go by the board. One can readily imagine how a minister of the Balfourian type, speaking in the eighteenth instead of in the twentieth century, would have argued against constitutional government because other countries continued to submit to the despotism of absolute monarchs. "Do you think that England alone possesses a monopoly of political wisdom? Are other nations composed of fools?" These are the questions that an eighteenth century Balfour would have asked, and he would have proceeded to urge that though political freedom was an excellent thing, it ceased to be valuable unless all the world possessed it, and that therefore England should go back to the despotism from which she was saved by the Revolution of 1688. This is no fanciful illustration. There is a very close connection between England's political and England's commercial liberty. We have led the way in one as in the other, because liberty is a tradition of our race. We shook off serfdom, centuries before other countries could rid themselves of it; we emancipated our country from the domination of a foreign church as early as any of our neighbours, and earlier than most; we established constitutional government a hundred years in advance of any other country. It is therefore in no way surprising that England should still lead the world in commercial as in political, religious, and civil freedom.

Lastly we come to an argument that within the last few months has been loudly proclaimed by the modern apostles of Protection as if it were an entirely new discovery. It is in effect only the old superstition of sixty years ago, that a system of preferential tariffs is necessary to hold the Empire together. Even Mr. Gladstone in his younger days held that faith, and resisted the first efforts of Earl Grey to get rid of the colonial preferences. But Earl Grey was right.

The irritation caused by those preferences would have made the continuance of the Empire impossible. Their monstrous absurdity can be illustrated by one fact:—The British Government, in order to encourage the Canadian timber trade, imposed a heavy duty on foreign timber, yet the Admiralty stipulated in their contracts that no colonial timber was to be used in British warships, because of its inferior quality. When the trade of the nation was hampered by regulations of this character it is not surprising that prominent men of all political parties—among them Mr. Disraeli—should have questioned the wisdom of retaining a colonial empire that cost so much and returned so little. In a word, the Little England party was the distinct creation of the system of colonial preferences. The abolition of the last of these preferences in 1860 left the ground clear for the building up of a great Free Trade Empire. That ideal was not fully realised because English statesmen held—in words

that the late Lord Farrer was fond of using—that Freedom was greater than Free Trade. The self-governing Colonies were left free to impose protective duties on British goods, although then, as now, the Mother Country bore the cost of their defence. They have freely exercised the freedom accorded to them, and in many cases have built up a high tariff wall against British goods in order to foster an exotic colonial industry. By so doing they have undoubtedly injured themselves, for they have checked the development of their primary industries, which needed no protection. Whether England has greatly suffered by this colonial protection is more doubtful. The colonial market, whether open or closed, has always been a relatively unimportant one. In the five years ending 1859 our exports to British possessions averaged 31·5 per cent. of our total export trade; in the five years ending 1899,[1] the percentage was 32·9 per cent. During the intervening forty years the Empire expanded enormously both in area and in population, yet the percentage of exports to British possessions remained almost stationary. When it is remembered that the most important of British possessions is India, and that our trade with India is on a Free Trade basis, it will be seen that there is very little ground for the assumption that our colonial trade

[1] This year is taken in preference to any later year because the colonial trade in each of the years 1900, 1901, and 1902 was greatly affected by the South African War.

could ever have become a substitute for our foreign trade, even if absolute Free Trade had prevailed between all parts of the Empire. It is significant to note that our export trade to Canada, the greatest of the self-governing Colonies, has never greatly exceeded 3 per cent. of our total exports.

We may therefore console ourselves with the knowledge that the injury done to the Mother Country by colonial Protection has not after all been very serious. On the other hand, the benefit conferred upon the Empire by colonial liberty has been enormous. The liberty granted to the Colonies to work out their own salvation, even at the cost of some incidental injury to the Mother Country that defends them from foreign foes, has bred in them a spirit of loyalty to the imperial tie that no other system could have created. If we had insisted on keeping their ports open to our trade, they would have disbelieved in the sincerity of our motives, and would have complained, in the usual protectionist jargon, that we were making their shores a dumping ground for our goods. The wisdom of our forbearance has been proved by the success of our policy. Our colonial fellow-subjects may insist on taxing our goods, but they are willing to shed their blood in our battles. It is barely a year ago that the men, who are now shrieking for Protection to save the Empire from instant dissolution, were pointing with pride to an Empire greater and more united than the world had ever seen before. That Empire is

broad based upon freedom. It can only be shattered by any system of tariff manipulation which would destroy the liberty now enjoyed by Colonies and Mother Country alike, in order to substitute a corrupting commercial bribe for the cementing bond of affection.

H. C.

GRAY'S INN.
Oct., 1903.

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THE COTTON INDUSTRY

By Elijah Helm

IF there be one British industry which is entitled to receive more careful attention than all others, in the course of the present "fiscal inquiry," it is the cotton manufacture. That industry provides the means of livelihood, directly and indirectly, for vast multitudes of our people, and its greatly diversified productions supply the most important class of merchandise by which payment is made for the food and other valuable forms of wealth brought to this nation from beyond the seas. It is also, as I shall presently show, the chief instrument by which the protectionist policy of other countries is largely overcome and made innocuous to us.

The entire value of the cotton manufactures of every description produced in the United Kingdom is about £100,000,000 per annum, of which £29,000,000 is retained for home consumption and £29,000,000 is exported to India and the Colonies, leaving approximately £42,000,000, representing the

value of the cotton manufactures finding markets in foreign countries. This last item constitutes about one-sixth of the whole of the exports of British productions sent from our ports in the course of a year to all destinations.

Now, considering that the British cotton industry is of the nature of an exotic, in that its principal raw material is drawn from sources thousands of miles distant from the seat of manufacture, and considering also that the entrance of its products into some of the wealthiest nations is impeded by high customs duties, it is surely a proof of singular vitality and efficiency that it should be able to sell more than 70 per cent. of its manufactures in competition with the rest of the world, and in defiance of the barriers which so many countries interpose against them. In comparison with this huge export trade in cotton goods, that of every other nation falls into insignificance. To what is this supremacy due ?

It is due, no doubt, to various causes. Foremost among them, however, is the fact that our Free Trade system enables us to manufacture cotton goods at a lower cost than is possible in any protectionist country. That the cost of production is less in Great Britain than elsewhere can be shown in detail by a comparison of the items entering into it, in particular cases. But we need not follow so tedious a process, since there is at hand a less complicated, and perhaps a more convincing, proof of

the competitive superiority of the British cotton industry, the validity of which can be tested by any one who is acquainted with, or has access to, the published statistics of international trade.

Triangular Trade.

Take the case of France. She imports large quantities of raw silk, and other products from China, Japan, India, and Turkey. Yet the amount of merchandise exported from France to these countries in return is extremely small, and assuredly she does not send them gold. How, then, does France pay for these liberal imports from the regions I have mentioned? She pays for them indirectly, not by means of her own productions, but by sending her wine, her silk goods, her gloves, and her artistic manufactures to Great Britain; and Great Britain settles the account by exporting her manufactures, chiefly cotton goods, to the countries in question. Now, clearly, if France were able to supply to them the things they chiefly need, viz., cotton manufactures, at prices as low as they can be obtained from England, she would not need to employ, as in fact she does, the cotton looms of Lancashire in order to furnish the means of payment to China, Japan, and Turkey, for the raw silk which she receives from them.

Another striking example. The United States, notwithstanding their wonderful variety of climate

soil and other resources, import immense quantities of tropical produce from China, Japan, India, Africa, South America, and the West Indies. But their direct exports to these regions fall short by several millions sterling of the value of the imports thence to the United States. Here again the chief means employed to adjust the account is the export of cotton goods of Great Britain. Other methods of adjustment are, of course, adopted in addition. Yet the remarkable conclusion remains that the United States do not pay for more than a comparatively small portion of the merchandise they import from these sources by sending them American products, because they cannot produce the kinds of goods which such countries want at prices as low as those goods can be obtained from British manufacturers.

These illustrations of the indirect or roundabout methods of international trade are very instructive, and any one may easily verify them by reference to the official trade statistics of Great Britain, the United States, and France. Others of like tenor may be discovered by any student who may care to investigate the currents of commerce between country and country with a view to finding out the ways in which international trade balances are settled. But from the present point of view the most important practical lesson which they teach is this: that however successful the great protectionist countries may be in lessening their

imports of manufactures from Free-Trading Great Britain, they are obliged after all, and mainly because of their protectionist policy, to use—indirectly, of course, and unintentionally—British manufactures for the purpose of discharging the debts which their necessities require them to contract with other countries. The chief instrument by which these debts are paid is British cotton manufactures.

A New Competitor.

This fact is of the utmost importance in considering the question with which we are now confronted whether or not the British nation should cast aside the practice of purchasing without fiscal impediment the materials and accessories of its industries at the lowest possible prices wherever in the world they may be found.

But before proceeding further it is incumbent to examine the very formidable competition which the British cotton industry has met with during the last ten years in the Southern States of the American Union. According to the official census of 1879–80 there were 12,360 power looms in the cotton mills of the Southern States. But in 1900–1 these had increased to 122,902, and the number is now considerably greater. Within the same interval the number of spinning spindles grew from 561,360 to 5,819,835. At first the production of manufactured goods was entirely consumed at home, but within

the last fifteen—and particularly within the last ten —years, the Southern mills have been making cotton cloth for export, chiefly to China, in the northern part of which—especially in Manchuria—they have forced their way with little difficulty, even against English and North American goods of like kind, in almost constantly increasing quantity. These cloths —called "drills" and "sheetings"—are, however, only a small group amongst the coarser and heavier kinds, and the Southern manufacturers have not been able to compete either with those of the North-eastern American States or of England in respect of other descriptions.

The secret of their success is not proximity to the source of cotton supply. The cost of transporting raw cotton to the Northern mills, and to Lancashire, which is about the same in both cases, is little greater than that of conveying it to the manufacturing districts in North and South Carolina. The secret lies mainly in the utilisation of a previously neglected source of factory labour supply in the Southern States. The emigration from North to South, since the close of the Civil War, more than thirty years ago, of many white settlers on the land created a considerable population of small farmers from which the labour force of the Southern cotton mills is now drawn. The negro population is not engaged in cotton mill operations. Hitherto the workpeople thus tempted from the land to the factory, have been content to work at very

much lower rates of wages than those paid in the Northern mills or in Lancashire. Moreover, in the absence of State factory laws in the Southern States, the hours of daily labour are inordinately long, and therefore the fixed-charges item in the cost of production has hitherto been exceedingly low. The piece-rate wages in the South for weaving a particular description of cloth are not much more than one-fourth of those paid at Fall River, Massachusetts, or at Blackburn, in Lancashire. This example is a fair illustration of the exceptional and temporary advantage which the Southern manufacturers possess in respect of the cost of labour. Again, the building of cotton mills in the South has been artificially stimulated by free grants of land, by exemption from taxes, and by other expedients proceeding from local enthusiasm and pride in the creation of new industries on the spot. This again must be reckoned a passing and adventitious benefit.

Special Circumstances of the Southern States.

It is right to dwell upon this remarkable development in the Southern States, because it may be thought to conflict with the statement that the cotton industry of the United Kingdom is the most efficient of its kind in the world. Two things must be observed, however. In the first place, the new

competition is confined to a few coarse descriptions of goods which are not extensively produced in England. It concerns much more the cotton manufacturers of the North American States, and they, to judge from recent authentic reports, are not afraid of the further increase of Southern competition. They have good reason. For, secondly, it is inconceivable that rates of wages so greatly below the standard current in the North can long prevail in the Southern cotton mills. Moreover, there are indications that the supply of cheap labour in these mills is becoming exhausted, since the manufacturers are now compelled to employ an astonishingly large proportion of children, some of them of tender years. It is impossible to believe that American public opinion will long tolerate the absence of factory laws in the South such as those which exist in the North. Finally, the cotton trade-unions are at work in the South, and their efforts, combined with the other forces tending to equalise industrial conditions as between North and South, must assuredly result in the disappearance of the special advantages in respect of the cost of labour which have done so much to extend the cotton industry of the South.

This competition of the American Southern cotton mills with those of our own country is the only serious instance of successful substitution of foreign for British goods in recent years, and, as already stated, it is confined to a class of coarse manufactures

not now extensively made in this country. The spinning mills of India have, no doubt, reduced to very small dimensions the export of coarse English cotton yarn to China and to India itself, but that is not a modern innovation. In like manner the yarn spun in the Japanese mills has made the competition of English yarn in the Far-Eastern markets much more difficult for our spinners. With these exceptions, however, the business of producing cotton yarns and goods for export remains still in the hands of British manufacturers and merchants. In other countries the industry, however greatly it may have increased within the last twenty-five or thirty years, is still for the most part a home-market industry, and so long as the advantages we possess are retained, especially that of low cost of production there is no ground at present visible to anticipate that we shall lose the position we now hold of being the main suppliers of cotton goods to markets outside the sources of production.

Cheap Materials and Accessories.

It must, nevertheless, be acknowledged that at times foreign competition with certain descriptions of our own cotton manufactures is perceptibly keen, especially when the home markets of the various foreign countries are depressed, and unable to take off the full home production. This fact is a plain indication that the margin of advantage which we

possess is not so great as to warrant any trifling with it by increasing the cost of production.

We are thus brought round again to the question, How would the abandonment of Free Trade affect the British cotton industry? It has been shown that foreign nations which put high duties on British manufactures are, in effect, compelled to employ our cotton goods as a means of paying for the produce which they import from third countries, because cotton goods are the form of payment which is chiefly preferred, and indeed insisted upon. These protectionist countries partially exclude British cotton goods from their own home markets, but they cannot prevent our goods from being used in order to pay for their imports, because British cotton goods are cheaper than those which these protectionist countries produce.

Why are they cheaper? Partly, no doubt, because the English cotton industry is excellently organised; partly also because the moist English climate is favourable to the spinning and weaving of cotton. But over and above these advantages—and this consideration applies to British industry generally—it is enabled to purchase at lower prices than its competitors in protectionist countries the materials and accessories required in the various processes. Raw cotton is not the only material consumed in the industry. Large quantities of leather, dyeing and bleaching requisites, iron and steel, oil, tallow, flour and other farinaceous sub-

stances, besides many minor accessories, are required. It may, perhaps, be thought that these are trifling items in the cost of production. They are, it is true, subordinate to that of the price of raw cotton, but they are collectively by no means of small importance. On the contrary, the advantage which British cotton spinners and manufacturers enjoy from being able to buy their machinery, their iron and steel, their bleaching and colouring materials, and, in short, all the requisites of their industry, at lower prices than their rivals abroad, is often a decisive advantage in practical competition.

It must, however, be parenthetically acknowledged that in one respect the English cotton industry has long been heavily handicapped by the anomalies of our patent law. The subject is much too complicated to be adequately dealt with in a paragraph. It is, however, quite true that the industry has suffered greatly within the last twenty-five years from the fact that it has had to pay higher prices for patented coal-tar colouring matters than its competitors in any other country, and that this disadvantage is directly traceable to the imperfections of British patent law. I refer to this subject now, only for the purpose of strengthening the argument that the cheapness of the accessory materials of the industry is of the greatest importance in promoting its success. The excessively high prices which British printers and dyers of textile fabrics have been compelled to pay for certain

colouring materials and other chemical products required in their industry have been an appreciable clog upon their progress, and they supply one of the reasons for the occasional success of continental producers in competing with us for the supply of coloured textile fabrics in foreign markets. Such incidents as this tend, however, to support the general argument that to be able to obtain the principal and accessory materials required in industrial operations at the lowest prices current in any part of the world free from fiscal obstruction is one of the main causes of the supremacy of the British cotton industry.

But it may be answered: "No one is proposing to tax the materials of industry, and especially of the cotton industry, the maintenance of which is so essential to the prosperity of the nation." That is not quite accurate. Even the small duty on wheat and other farinaceous substances which has recently been removed would, if it had been continued, have added perceptibly to the cost of production in the cotton industry. I know one company—a very important one—upon which it would have imposed an additional expenditure of nearly £4,000 per annum. I do not think it necessary to discuss the question of the incidence of the corn duty. Owing to market fluctuations and other temporary influences a new duty may not always lead at once to a rise of price. But a tax upon any material is an addition to the cost of production,

and distribution, and after the ultimate adjustment the consumer must pay it. In like manner a lessening of the cost of production must sooner or later reach the consumer, although it may be detained on its way to him.

A Privilege to Selected Persons.

To come to the larger question. It is quite true that Mr. Chamberlain and his supporters repudiate the idea of taxing raw materials. But we have been clearly told that they intend to tax food and manufactured articles, and in so doing they must abandon Free Trade.

Now what is the essential principle of Free Trade? It is this—that Parliament may impose a duty on any imported commodity provided that the public Treasury shall receive the whole of the benefit resulting from its imposition. No private person must have a share in it. To violate this principle is to give a privilege to selected individuals or classes at the expense of the whole community. But such privilege is not only inequitable and unjust, it is also, as all experience goes to prove, economically wasteful; and once established, it is certain to extend.

The inevitable tendency of Protection to spread is abundantly demonstrated in the fiscal history of all countries where it has become systematic. The extension of a privilege bestowed upon one, or a few industries, to many others, is justified by the

sentiment of equality, which demands that when the State has granted a privilege to one industry it should not be denied to another. For this reason Free Trade requires that whenever a customs duty is put upon an imported commodity an equivalent excise duty should be placed upon those home productions which compete with it, or which may be substituted for it. Only in this way can the public Treasury be sure of receiving the whole of the advantage resulting from the imposition of the customs duty.

The bearing of these considerations upon the general cost of industrial production is obvious and weighty. The singular advantage which British manufacturers have enjoyed during the last fifty years over their foreign competitors is that they have been able to purchase at lower prices all the principal and accessory materials required in their businesses. But, as we have already seen in the case of the cotton industry, this advantage has been of essential service in enabling us to compete successfully in the world's markets, and to overcome the obstacles placed in the way of our direct exports to protectionist countries. These shut out, not entirely, but in greater or less degree, our manufactures from their own markets, but the means which they employ for this purpose have the effect of so far raising their own cost of production that they are compelled to hand over to us the business of making goods to be used in paying for their

imports from other parts of the world. This important, and perhaps unintended, consequence of protectionist policy in foreign countries—the artificial enhancement of the cost of production—is more far-reaching and extensive in its scope than is commonly supposed.

DUMPING.

We are told that imported raw materials are not to be taxed under the proposed new fiscal scheme. But what is a raw material? Much the largest proportion of the £100,000,000 worth of "manufactures" now imported duty free annually into the United Kingdom is used in British industries instrumentally for further production. Probably not less than 80 per cent. of such imports is thus consumed. It goes without saying that such materials are sold to us at very low prices, or they would not be imported; and the benefit thus accruing to our industries as a whole is all the greater because of the prevalence of systematic Protection amongst our manufacturing competitors in other lands. Whenever they have a surplus of any commodity which cannot be disposed of at the high home prices resulting from Protection, relief is obtained by exporting the surplus.

Under natural conditions, that is to say under a Free Trade system, the weight of the excess would tell equally upon home and export prices. But the very object of Protection being to keep up the

home price, the surplus is sent abroad. And since the United Kingdom offers the only great and unobstructed market for anything good and cheap, these surplus commodities are sent to our ports, to the advantage of our industries, which can use them as means of reducing the cost of their final products. Examples of this kind abound in many departments of manufacture, and they are not absent from the cotton industry. Take the extreme case of woven piece goods. If these can be obtained at "dumping" prices from abroad because of temporarily excessive production as they come from the foreign loom, they furnish cheap raw material for the British dyer, bleacher, printer, or finisher. And even when they are received at dumping prices in the finally finished state, they become the raw material of the great clothing industries, such as those of Leeds or Manchester, which employ altogether thousands of British workpeople.

The thought may perhaps occur to the critical mind—"Yes, it is quite true that wherever these 'dumped' commodities can be thus utilised they are industrially beneficial; but they must injure the home producers of like commodities at all events so long as they are being imported." The answer is that these producers also are advantaged by having access to the cheapest markets for the materials which *they* consume. The benefit is thus general, and is highly favourable to the success of our

industries as a whole. There is also the further consideration that the temporary disadvantage of having to meet the competition of cheap imported commodities is not essentially different from that resulting from excessive home production. If manufacturer A. has accumulated a stock which he cannot sell at current market rates, and wants to get rid of it, he must "break the price" to the hurt of his neighbour, manufacturer B., who is in the same branch of business, but is under no such necessity. In both cases the effect is the same, a lowering of prices due to excessive supply. Both cases alike are consequently to be treated as incidents of competition involving, no doubt, individual trouble and loss for the time being, but not calling for heroic remedy in either of them.

The Foundation of our Success.

I hope I have succeeded in showing that the British cotton industry, the greatest manufacturing industry in this country, is largely dependent for its success upon the Free Trade policy under which it has made such wonderful progress during the last half-century. It still holds its foremost place as a producer for the markets, not only of this country, but also of the whole world. Judged by partial and misleading criteria, the progress of some foreign cotton industries seems to have been much more rapid than that of our own. They have outstripped us, for example, in the rate at which their consump-

tion of raw cotton, as stated in weight, has grown during the last thirty years. But that is a very unsafe standard. The proportion of cotton used per spindle in England, not the aggregate consumption, has long been gradually lessening because our mills have been producing finer and finer yarn every year. The progress of mankind in wealth and refinement has vastly increased the demand for superior, more varied, and more tasteful cotton fabrics, requiring for their production finer yarns. For the spinning of these, and in a large degree for the weaving and finishing of the superior fabrics, our climate and the training and skill of our managers and workpeople, as well as the industrial and commercial organisation of the British cotton trade, have proved themselves admirably adapted. Of these we cannot be easily deprived. But there are the further inestimable advantages resulting from our unique fiscal system which it has been the main object of this essay to justify. These advantages are threatened by the agitation recently sprung upon the country in the name of "fiscal reform." They may be lost, unless those who are inclined to accept incontinently the representations of the "reformers" insist upon submitting them to careful and searching investigation.

Let no one be deceived by the half apologetic phrases by which the new proposals are advocated. We are told that it is not Protection, but only a "modification" of Free Trade which is aimed at,

as if it were possible to modify our fiscal system, in the manner suggested, without instantly abandoning Free Trade. Protestations of this kind are familiar enough to those who have made a study of customs tariff history.

All sorts of plausible pretexts have been urged as excuses in the beginning of high protectionist movements. But the unfortunate and fatal fact is that when once the system of privilege known as Protection has gained a foothold, it inevitably mounts to formidable proportions, and cannot be eradicated except under the pressure of some national disaster such as the distressful famine which settled the fate of the Corn Laws. To open and avowed Protectionists this argument is rather welcome than repellent. They rejoice in the persistent vitality of Protection and in its inevitable tendency to cover the whole field when the plant has been allowed to take root. To them, therefore, it is not addressed, but to those British citizens whose minds are open, and who are prepared to weigh carefully the evidence *pro* and *con.* before committing themselves one way or the other upon the most momentous national issue which has been presented to the British people for many a generation.

The principle which it has been the main purpose of this essay to demonstrate is obviously of much wider application than is here given to it. If unimpeded access to the cheapest sources of supply for industrial materials is a vital factor in the main-

tenance of the British cotton manufacture, it must be important, if not essential, to the success of many others of our industries. It is, indeed, the chief foundation of the industrial prosperity of these little islands in the northern corner of Europe. It is a hidden foundation, in the sense that it needs some thought in order to perceive its essential importance to the economic welfare of our country. But it is not the less real. The principle was clearly set forth by Sir Robert Peel in a speech addressed to the House of Commons on July 6, 1849, when he pointed out that "the best way to compete with hostile tariffs is to encourage free imports," and that the injury done to us by foreign tariffs can best be combated "by buying that of which you stand in need in the cheapest market." These words are just as true to-day as when they were spoken.

THE WOOLLEN INDUSTRY

By Sir Swire Smith

THE wool industry is the oldest of the textile industries of Britain, and was introduced by the Flemings, at or near Norwich, early in the fourteenth century. For long years prior to that time the country was an exporter of wool. "The ribs of people throughout the world," wrote Matthew Paris, "are kept warm by the fleeces of English wool." So important did the woollen industry become that at the close of the seventeenth century it is stated that the production of wool and its manufactures constituted the "most solid foundation of the national prosperity and riches." At this time Norwich was the largest city in the kingdom next to London. To use Macaulay's phrase, it was then "the chief seat of the chief manufactures of the realm." At that time, of course, the manufacture of wool was a hand industry. The slow and tedious processes of combing, carding, spinning, and weaving were

conducted mainly in the dwellings of the operatives. The yarns and pieces were dyed in small establishments, and the distribution of the raw material and the collection of the manufactured product were carried on by means of pack-horses and primitive waggons. Britain in those days was hardly in advance of India and other Eastern countries in its manufacturing development, and our manufacturers periodically suffered terribly from their competition, as our ships brought their cotton and silk products to this country.

Early Inventors.

A complete change was effected by the inventions of Hargreaves, Arkwright, and a few others, beginning about 1770. These inventions, though first applied to the spinning of cotton, were soon adapted to wool. Naturally these early machines were of a very primitive character, but they served. In place of hand labour carried on in cottages, small factories were started in which "gin-horses" were introduced to propel the newly-invented machinery. Next came water power, about 1790, and at about the same date James Watt's steam engine began to be successfully applied to the machinery, and thus the factory system, so marvellous in its influence upon the destinies of the human race, was inaugurated. The power loom was invented by the Rev. Dr. Cartwright in 1785. For a time Norwich continued to be the acknow-

ledged wool centre, but the industry had taken root in the West Riding of Yorkshire, and the earliest factories were erected in that county. During the transition from hand methods to machinery the trade was placed in constant peril by strikes and riots, which broke out on the introduction of every mechanical improvement dispensing with hand labour. These demonstrations were successfully resisted in the north, but in Norwich there was a refusal on the part of those most interested to depart from the antiquated methods of the past, although hard pressed by competition. For any one in the beginning of the last century to attempt to set up machinery in Norwich was to venture his life. This resistance to improvement stripped the illustrious city of its manufacturing prestige, and many of the misguided and distressed artisans were glad to accept employment in northern towns as minders of the very machines whose admission to their own city they had so blindly and resolutely refused.

The next great step in the wool manufacture was the invention of wool-combing machinery, of which the germ was supplied by Dr. Cartwright in 1790 and perfected in a series of machines by Heilmann in 1846, and during the next few years by Holden, Lister, Donisthorpe, Noble, and others. All the most important machines, with the exception of the Jacquard fancy loom, by Jacquard, of Lyons, in 1801, and the combing machine by Heilmann, were

of British invention and construction, and the main improvements since those dates have been the outcome of British ingenuity embodied into practical shape by British machine makers.

But until the repeal of the Corn Laws the commercial progress of the country was very slow, and but imperfectly indicated its potential importance. The poverty of the masses was appalling. Agricultural labourers were in a chronic state of semi-starvation; factory operatives had hard work and little pay; among the manufacturers there were periodical panics, over-production, and failure to meet engagements, while the condition of the masses in other countries was no better. The Free Trade measures of 1846 opened up a new era for Britain and the world. The policy of the Open Door enabled us to offer cheap manufactures in exchange for food and raw materials, and our ships covering the seas acted like the magic carpet of the "Arabian Nights" in conducting the great business of international exchange between Britain and the rest of the world.

The great Exhibition of 1851 was a revelation to the manufacturing nations of our superiority in engineering, textile machinery, and in general mechanical equipment. It was said by the "croakers" that we opened our workshops to the bandits of the world, and invited them to despoil us of our treasures. But nothing was sold that was not paid for at a substantial price. The Exhibition, however

taught lessons to us as well as to our rivals. We were superior in heavy cloths and in the general fabrics for the million, but in the better goods, and especially in silks, we were inferior in design, taste, and colour. In the same way in the fine all-wool merinos and cashmeres, the French exhibits were marked by superior excellence of finish and quality, which to a large extent they still retain.

It was not to be expected that other nations with resources equal to our own, and with plenty of cheaper labour, would be content to leave the field of manufacturing entirely in our hands. Our machine makers were as willing to sell their wares as the machine users had been to sell theirs, and soon there opened up a vast export of machines of all kinds for the equipment of competing factories in other countries. For more than twenty years those who have followed the course of events have seen that half the workpeople in this country have been employed in forging weapons to be used by competitors in other countries against the other half. Even if we had desired to stop all this development of manufacturing in other countries I have never seen a suggestion as to how it could be done. Even if we could have prevented the sale of British machinery to our rivals, the parts would easily have been obtained and copied by foreign makers. Under Free Trade the wealth of the country so increased that we were able to supply to other countries a vast amount of

capital for the building and equipment of railways, factories, and all kinds of industrial undertakings. We became the "universal provider" of all machine-made goods and of everything pertaining to mechanical production, and by distributing our inventions and monopolies everywhere we "levelled up" the enterprising nations of the world to our standard, and in effect restored the practical equality of equipment that had existed among them one hundred and fifty years before. This is the natural result of a policy which encouraged our people to buy in the cheapest and sell in the dearest market, and although it exposed the manufacturers of Britain to the rivalry of those of other countries, it resulted in the enrichment of the whole world, and of this country most of all. It may be said that for at least thirty years our industrial rivals in other countries have possessed themselves of our material advantages, and they have been untiring in their efforts to turn them against us.

Better Education Abroad.

In one direction at least they have "outranged" us. While we concentrated our attention on the development of our machines they devoted their energies to the educational equipment and training of their men. They recognised what we had ignored, that of all machines the human machine best paid for development. "There is that scattereth and yet increaseth, and there is that withholdeth more than is

meet, and it tendeth to poverty." Our continental neighbours scattered their education broadcast, and it brought them their chief increase in industrial wealth; we in this country withheld it, and it has tended to our material as well as to our intellectual poverty. None can tell the loss to this country through our neglect of intellectual training. I unhesitatingly assert that in every important manufacturing industry in which we have been beaten by the foreigner the evidence on inquiry has shown that the cause has not been due to lower wages nor longer hours, nor to any advantages in obtaining raw materials—least of all to their protective tariffs—but to the superior education and technical training of our rivals. While resisting, on the ground of poverty, in this country the establishment of educational facilities equal to those of our neighbours, we have been paying for their technical schools by buying the commodities that these schools were instrumental in producing. I mention this fact because it is the only protection of our rivals that has enabled them to score against us; they have surpassed us "in putting their brains into their work." But having in many instances surpassed us in the effective use of our own machines, they then erected barriers in the shape of protective tariffs with the object of compelling their own people to support their own manufacturers as against those of this country, and I confess that the loss of important markets sustained by British manufacturers has caused in many

instances intense suffering and dislocation until other trades or new markets could be found. This periodical displacement has been going on for at least twenty-five years, but such has been the enterprise and the perseverance of many of our manufacturers, that in most instances they have overcome their difficulties, and literally as one door has closed another has opened. Commenting on the same difficulty of dealing with protective duties which our wool manufacturers had to contend with two hundred years ago even more than now, De Foe (the author of "Robinson Crusoe") remarks: "Our manufacture" (from wool) "is like a flowing tide, if it's bank't out in one place, it spreads by other channels, at the same time, into so many different parts of the world, and finds every day so many outlets, that the obstruction is not felt; but, like the land to the sea, what it loses in one place it gains in another."

The Success of our Policy.

The Fair Traders and Protectionists foretold immediate ruin and disaster as the result of allowing our trade to be assailed and not hitting back, but their prophecies seem to be no nearer fulfilment now than when they were made, over twenty years ago. Employment is more regular and is better paid now than it was then, food and clothing are cheaper, and the people enjoy greater comforts and more leisure than ever before.

We still command the best share of the neutral markets, and while in general holding the best branches of our home trade, we do the lion's share of the import business with each of our largest protected competitors. And in spite of the pessimists at home and the critics abroad who disparage our position and foreshadow our coming decay, among our best informed rivals in every country the confession is universal that if the products of Britain were allowed a free entry they would invade every market in Europe and America even against its own manufacturers.

It would be difficult to estimate the influence of Britain in promoting the prosperity of our Colonies and other countries by her manufacturing industries and her policy of free imports. This applies to all industries, but especially to wool. The first sample of Australian wool was brought to this country as a curiosity in 1808. It was not, however, till twenty years after that the yearly import reached a million pounds weight, but following the inventions of combing machinery and the adoption of Free Trade the consumption of our own domestic wool and the import of colonial wool reached enormous proportions, the production of wool being the chief source of the enrichment of our Australian Colonies.

The annexed figures give a far better idea of the growth of the British wool industry than can be obtained from the statistics of the value of the exports of manufactures. The raising of tariffs, especially

those of the United States, have from time to time seriously affected the exports from this country. There have also been periods of inflation and depression of prices, which have abnormally affected values, so much so that for purposes of comparison the setting of one period against another is in some instances so misleading as to be worthless.

CONSUMPTION OF WOOL IN THE UNITED KINGDOM.

	Estimated Yield of Domestic Wool.	Imports of Foreign and Colonial Wool.	Exports.	Consumption.
	lbs.	lbs.	lbs.	lbs.
1800	96,000,000	9,000,000	—	105,000,000
1850	130,000,000	77,000,000	26,000,000	181,000,000
1870	150,000,000	266,000,000	101,000,000	364,000,000
1890	138,000,000	649,000,000	371,000,000	502,000,000
1900	141,000,000	587,000,000	221,000,000	576,000,000
1902	135,000,000	676,000,000	110,000,000	562,000,000

THE YEAR 1872.

For example, it is a favourite device of some of the Fair Traders to quote the statistics of the export of woollen goods in the selected year 1872, when they reached £39,000,000, against, say, 1900, when they were valued at £25,000,000, as showing the decline of the wool industry. These figures certainly indicate without explanation an alarming shrinkage. It happens, however, that 1872 was the year of the biggest boom ever known in the woollen and worsted industry. The Franco-German war was just over, and our two great manufacturing rivals and customers were well-nigh

strangled and completely disorganised. There was a tremendous demand for goods from all parts of the world, and England was the best equipped for supplying it. English wool reached the highest price ever known—half a crown a pound—about four times its value in 1900, when the lowest point was about reached. Of course manufactured goods and yarns followed the raw material, and to quote these two years as representing the normal conditions of the trade is a misrepresentation of the facts. In 1872 the consumption of wool was the largest on record up to that date, and amounted to 389,000,000 lbs. The inference would naturally be that our export of goods having so seriously diminished in 1900 our consumption of wool would have diminished in a similar proportion. Yet in 1900 we consumed 576,000,000 lbs.—half as much again as in 1872. This hardly spells ruin.

In 1872 we did an enormous export yarn trade, especially with Germany; it amounted to 41,800,000 lbs. But in 1900 this trade, instead of falling off, had risen to 72,500,000 lbs. In the interval a new industry had arisen, namely, the export of combed tops, which in 1900 reached 28,000,000 lbs. There was also a considerable increase in the home trade for manufactured goods, but I am of opinion that there has been a falling off in the weaving industry of the Bradford district, the demand for labour at better prices in other industries having taken away many weavers. The married women are more and

more required at home, and the men in the machine shops, earning higher wages, can afford to keep them there. It is the natural and gratifying outcome of our prosperity that the demand for labour in so many directions is constantly attracting our operatives from the lower paid to the more lucrative industries. For many years past there has been a great increase in the import of manufactured wool goods and yarns, which, instead of indicating decay, as is so often proclaimed by the protectionists, is an evidence of advancing well-being on the part of our people. Under perfect freedom of exchange these imports would be merely incidents in the international division of labour in which the most efficient country would make choice of the branch of industry that pays best or is most suited to its resources. Let me illustrate. I remember a great outcry many years ago that Leeds was going to ruin: it had lost the flax trade. The fact was that both labour and capital in Leeds could do better in other industries, and so the flax trade was allowed to find a home in France and Belgium, where wages were lower and the hours were less restricted by factory legislation.

Scotch Weavers and Belgian Yarn.

Bitter complaints were made twenty years ago of the downfall of the woollen spinning industry, as was shown by the immense import of woollen yarn from Belgium, and the Commissioners on

Technical Instruction at that time, in order to get at the facts, visited the factories in which it was produced, and those also in Glasgow and the south of Scotland in which the yarn was woven. We ascertained that about fifty years ago the Glasgow manufacturers were almost wholly supplied with woollen yarn from Yorkshire, but that in the course of years the industry had practically been transferred to Belgium. In fact, the Belgians started a new industry. Among the wools imported in those days to Liverpool were some from Buenos Ayres, which were much infested with "burrs," the prickly seeds of a plant that grew extensively on some of the pastures. The English spinners, who were unable to extract the burr, would have nothing to do with the wool, which became greatly neglected, and was offered at a much depreciated price. This wool, so shunned by the British, was experimented upon by the Belgians, who by chemical knowledge obtained in their technical schools hit upon a process of extracting the burr, thus making a yarn very much cheaper for the quality than any offered by the English or Scotch spinners. There was no British yarn like it, and for a time it did not find favour. But its cheapness made an opening for it, and gradually it superseded the Yorkshire yarns in the Scotch trade, and became so great an industry that the sale of the wool was transferred from Liverpool to Antwerp, where the sales have since been conducted. We were told in the woollen districts of

Yorkshire that the loss of this great trade in yarn had been made up by something better, and the woollen spinners of the south of Scotland confessed that they were not seriously hurt by it, although at that time the import had reached 14,000,000 lbs. a year, employing about fifty spinning mills, with an average of ten sets of carding engines in each. The Glasgow manufacturers affirmed that the introduction of Belgian yarn *had been the salvation of the textile industry of Glasgow.* They said that it would be simply impossible to spin the yarn in Scotland, there being no labour available at the low price paid in Belgium, and they further maintained that to stop the import of Belgian yarn would practically compel many of the manufacturers of Glasgow to establish weaving plants in Belgium. Yet the import of this yarn amounted in 1902 to 12,000,000 lbs., at a value of over £1,000,000, and it is quoted by the protectionists as one of the instances of the destruction of British trade.

Who Does the Dumping?

Then as regards the import of woven goods, it is undoubtedly true that the demand for pleasanter and more profitable work has attracted many weavers from Yorkshire factories, while at the same time British yarns have found their way more and more to German mills, where at lower wages they have been woven into most attractive goods, and dyed, finished, and in many instances shipped to England.

A short time ago a German merchant in Bradford informed me that one of his customers had sent him some patterns of goods which he was shipping to London made from Bradford yarns, of which he was a large buyer, and the merchant had seen the self-same goods displayed in the leading shop windows of Bradford. Under the scheme of retaliation suggested by Mr. Chamberlain probably the first shot would be fired at Germany, and would be aimed straight at the import of worsted goods, which are said to be "flooding our markets." As a matter of fact, however, the flooding is the other way, for protected Germany bought from us in 1902 woollen goods and yarns valued at over £4,000,000, and sold to us in the same year goods and yarns valued at less than £2,000,000. To shut out of our markets these manufactured goods from Germany would act like a boomerang in shutting out from Germany the British yarns from which the goods are made. Had we not better "bear the ills we have than fly to others that we know not of"?

This wonderful weapon of Protection not infrequently recoils on the protector. Several years ago an industry which grew to large dimensions was established in a continental country for the manufacture of "ready-made clothes," which were exported to our Colonies and to all parts of the world. The cloth was almost entirely imported from England, and the patriots and domestic wool

manufacturers prevailed on their Government to foster the home production of the cloth by putting a heavy tariff on the imported cloth from Britain. The British manufacturers lost their market for a time, but an opportunity was afforded for the establishment of the "ready-made clothes" industry in this country, which in a few years absorbed considerably more cloth than had been exported, and practically took the trade away from the country that had established it. Britain does not always come off second best in her competition with the protected foreigner. At any rate, in towns like Bradford and Keighley, that have stood the full brunt of the protective tariffs of the world, the population has more than doubled in the last thirty years, and the people never enjoyed such regular employment and so much comfort and leisure as now.

Canadian Corn and Australian Wool.

Undoubtedly the most serious question that has arisen in connection with our manufacturing industries since the repeal of the Corn Laws is the scheme of preferential tariffs between Britain and her Colonies which has been thrown into the arena of political discussion by the Colonial Secretary. As yet the scheme is without form and void, except that it contemplates giving a preference on the imports of colonial products to this country by placing a substantial tariff on similar products from other coun-

tries. The Colonies are to compensate the Mother Country, not by admitting her products free, as she takes theirs, but by levying a lighter duty on her manufactures than on those from foreign countries. Now on this point there ought to be no mistake. It is a matter of business, and not of Imperial Unity and brotherhood, in which business does not enter. In Canada there are distinctly two parties : there is the party now in power which is especially interested in developing the natural and agricultural resources of the Dominion, and the party now in opposition that favours the development of manufacturing industries concurrently with agriculture. The manufacturers are stoutly opposed to the reduction of duties on any pretext. Their factories were established under high protection with the deliberate intention of shutting out such British goods as they could produce at home, and they affirm that any material lowering of the duties will ruin their industries. Just in proportion as this measure benefits the manufacturers of the Mother Country it will be represented as injuring those of Canada, and instead of promoting Imperial Unity, it will make division and cause ill-feeling ; and when the manufacturing interests again get the upper hand in the Canadian Parliament, which may come sooner than we think, there will be no hesitation on their part to restore to the manufacturers the protection that has been taken from them, even though their action may imperil the whole preferential scheme. Mr.

Chamberlain has admitted that food in this country will have to be taxed, but as yet he does not consider it is feasible to tax raw materials. Our chief import from Canada is food, which is to be protected by a tax on foreign food; while our chief import from Australia is wool, which represents a higher value than our food from Canada, and is not to be protected. Is it likely, in the financial bargain for colonial loyalty, that Australia will consent to the protection of Canadian food while her own wool is exposed to the open competition of the world? As to promoting unity, the probabilities are entirely in the other direction, and jealousies between the Colonies are sure to be aroused in proportion as one Colony appears to be more favoured than another. We may be certain that the Australian Colonies will refuse to make any reduction in their duties on manufactures that would injure their own nursed industries, and such reduction, even if obtainable, would never be accepted by our home manufacturers at the expense of any tampering with our free import of wool from the rest of the world.

THE LINEN INDUSTRY

By Sir R. Lloyd Patterson

THE earlier history of the linen trade before the introduction of machinery does not enter into the scope of the present article. Flax spinning by machinery to any important extent, especially wet spinning, commenced in the north of Ireland in 1828, some little dry spinning having previously existed there, as did dry spinning in Dundee for some time, and wet spinning in Leeds for a short time, previously. The trade soon assumed important dimensions in the three kingdoms: in England principally in Yorkshire and Lancashire, but also in Cumberland, Dorsetshire, and Somersetshire; in Scotland principally in Fifeshire and Forfarshire, but also in the south-west, Glasgow, Renfrewshire, and Ayrshire; in Ireland principally in the north-east, with Belfast as a centre. By 1850 there were 326,000 spindles in the North of Ireland; and by 1853 this number had increased to 500,000 spindles (contained in 80 mills)—this only twenty-five years after the introduction of the industry to Ulster.

The 500,000 spindles of 1853 in Ireland showed a nett increase at the end of the century of about 338,500, the total being then estimated at 838,582, a moderate increase on balance for a period of forty-seven years; but some noteworthy fluctuations had occurred in the meantime.

From the interesting and valuable reports of the Flax Supply Association, I learn that the number increased from the 500,000 spindles of 1853 till 1875, when the maximum of 924,817 spindles was reached. Since then the tendency has been generally downwards, some upward movement or a standstill for a year or two being occasionally recorded, but the total nett decline during the last twenty-five to twenty-seven years is only 86,235 spindles.

The size of the mills in former times as compared with the present is worthy of remark.

Fifty years ago each separate spinner in the trade had an average of 6,250 spindles; each company or firm now controls an average of 16,442 spindles.

In Scotland in the last thirty to thirty-five years or so many concerns (I could name 20 or more) have been stopped or broken up; while a similar fate has overtaken very many in England, the once important flax-spinning industry of Yorkshire being now almost extinct. The linen-weaving industry of Yorkshire, on the other hand, now supplied principally by foreign yarns, has maintained its position fairly well.

Ireland Holds Her Own.

Owing to certain advantages, Irish spinners have hitherto had the best of it in this struggle for existence, for, with the over-production that was going on, it had become a question of the survival of the fittest. Let us compare the figures for Ireland with similar returns from the principal flax-spinning countries in continental Europe, viz. :—

In *Germany* and *Austria* the maximum was reached in 1874 with	741,214 spindles.
While in the last returns to which I have had access this number was reduced to	573,210 „
A diminution of ... ... in 27 years.	168,004 spindles.
In *Belgium* the maximum of ... ... was reached also in 1874.	320,000 spindles.
By 1900 this number had fallen to ...	287,580 „
A diminution of	32,420 spindles.
In *France* the maximum of ... ... was reached earlier—in 1867.	750,000 spindles.
The year 1874, which was the highest in the other continental countries mentioned, already showed a considerable decline in France. This went on continuously till now (1902), when the number has fallen to	448,426 spindles.
A diminution of	301,574 spindles.

We thus see that, while Ireland showed a decrease in about 25 years to 1900 of 86,000 spindles, Austria and Germany had decreased by	168,004 spindles.
Belgium do., do., do. ...	32,420 „
And France, over a rather longer period, had decreased by	301,574 „
That is, a decrease in those countries of	501,998 spindles.

This is a significant commentary on what we so often hear, that continental competition is killing the Irish trade; for, while the Irish spindles have decreased about 9 per cent., those in the continental countries named have decreased in about the same time some 27½ per cent., and in France alone about 40 per cent.

Italy has now some 65,000 spindles at work; and in Russia, fostered by high tariffs, the industry has assumed important dimensions, the 83,000 spindles of thirty years ago having increased to over 300,000 now. This will be further alluded to.

Measured as near as may be by decennial periods, the number of spindles in Ireland is given in the report already mentioned as follows :—

In 1828 wet spinning of flax by machinery commenced.		
„ 1841 there were returned	250,000 spindles.	
„ 1850 „ „	326,008 „	
„ 1861 „ „	592,981 „	
„ 1871 „ „	866,482 „	
„ 1875 the maximum of	924,817 „	was reached.
„ 1881 there were returned	879,242 „	
„ 1891 „ „	827,451 „	
„ 1901 „ „	839,498 „	
Of which latter number 10,700 were in a closed concern.		

(The writer regrets his inability to give similar figures for England and Scotland.)

During the decade between 1850 and 1860 there were some disturbing causes. The outbreak of the Russian war had at first an adverse effect on the trade, owing to the interruption in the supplies of Russian flax; but by 1860 trade had resumed its normal conditions. The increase in spindles during the period was large. The American war broke out in 1861. Its effects at first were gravely adverse, the United States being our large customers; but when cotton ran up in price from about 6d. to about 2s. 6d. per lb., linen became the only substitute for the almost unobtainable cotton goods; and this gave the linen industry such a stimulus that from 1861 to 1868 the number of spindles in Ireland had rapidly risen from 592,981 to 894,273, an increase in seven years of 301,292 spindles, or rather over 50 per cent. The outbreak of the Franco-German war in 1870 temporarily upset the trade after its condition had again become normal; but this did not last long, and the restoration of peace ushered in a period of great prosperity, till in 1875, as already mentioned, the maximum number of spindles was reached. From 1880 till 1890 business was steady and on the whole fair to good; but soon after the latter year a period of depression set in which, with some few brief intervals of prosperity, has lasted almost ever since.

The Flax Crop.

It is a well-known axiom in manufacturing that to the continued, steady prosperity of any industry an adequate and constant supply of the raw material consumed in it is a matter of primary importance. Owing to the general suitability of the soil and climate of Ireland for the growth of flax, and the large consumption of the fibre in the country, one might suppose that home requirements would, for the most part, be met by home produce; but such, unfortunately, is no longer the case—all the coarser and also all the finer material required being imported, the former from Russia and the latter from Belgium—Ireland supplying latterly only a small portion of her own requirements in the medium qualities.

The extent of land under the flax crop in Ireland has varied greatly within the last fifty years. In 1860, the year before the outbreak of the American war, the sowing amounted to 128,595 statute acres. This figure showed a large annual increase till 1864, when the maximum of 301,693 acres was reached. It has been estimated that that acreage yielded 34·43 stones per acre, or a total of 64,506 tons, which, at the average price of £58 4s. 3d. per ton, should have produced a sum of £3,754,250. Discouraged by that (then) comparatively low price, £8 per ton less than the year before, the following year (1865) showed a decrease in the sowing of 50,260 acres, which, coupled with a diminished yield of only 25·14 stones per acre (a total crop of 39,561 tons),

and a continued brisk demand, raised the average price of Irish flax to £81 9s. per ton, an advance in one year of over £23 per ton, or fully 40 per cent., which, with one exception (1868), when the maximum average of £82 12s. was reached, is the highest on record. The year 1869 saw a return to normal conditions with an average price of £58 11s. 10d., a fall of £24 per ton. Thenceforward it will suffice to mention the Irish flax sowing in decennial periods, till we come to the last seven years.

—	Acreage: Statute Acres.	Yield in Stones per Acre.	Total Yield. Tons.	Average Price. £ s. d.
Thus in 1870 there were...	194,893	25·71	30,771	54 17 6
Do. 1880 do. ...	157,534	24·89	24,508	55 17 4
Do. 1890 do. ...	96,871	33·10	20,045	50 14 1
Do. 1895 do. ...	95,202	21·80	12,972	43 16 8
Do. 1896 do. ...	72,253	24·02	10,844	39 16 10
Do. 1897 do. ...	45,576	23·93	6,818	42 13 9
Do. 1898 do. ...	34,489	29·14	6,281	46 11 9
Do. 1899 do. ...	34,989	30·83	6,743	52 4 8
Do. 1900 do. ...	47,451	31·96	9,479	60 2 9
Do. 1901 do. ...	55,442	36·93	12,797	52 6 0
Do. 1902 do. ...	49,746	—	—	56 18 3
Maximum 1864 do. ...	301,693	34·43	64,506	58 4 3

In the present year (1903) the sowing amounts to 44,667 acres.

These figures, and those immediately preceding, are very interesting and very instructive. They show that the lowest average price on record was touched in 1896; and the result is immediately reflected in a decrease of 26,677 acres in the sowing

of the next year (1897), when, most unfortunately, the evil of a poor yield was superadded to that of a wretched price. No wonder the long-suffering Irish farmer was discouraged. And we find, in the two following years, the smallest sowings on record, both under 35,000 acres, with yields in both cases of under 7,000 tons.

Over the last forty-three years the average price paid by myself and my successors in business for nearly 26,000 tons of Irish flax of a great variety of qualities was nearly £58 per ton. The highest price I ever paid, and that only once, was £128 per ton.

These compare with a maximum of £82 12s. in 1868, and a minimum of £39 16s. 10d. in 1896, a difference between the maximum and minimum averages of nearly £43 per ton.

Every one would welcome increased sowings of flax in Ireland, but for various reasons, among them the increasing scarcity of labour in the country, there is no hope of the figures of former sowings being ever seen again. Following the fall of £8 per ton in 1901 the sowing of 1902 showed a decrease of nearly 6,000 acres; and 1903 shows a further decrease of 5,000 acres. Some Irish flax is exported every year, as there are some purposes for which it is the most suitable fibre in the world; and in the big sowings in the sixties and seventies the quantity exported to England, Scotland, France, and America was large.

The quantity of home-grown material left after

deducting the now small exports must be supplemented each year by importing foreign supplies to make up the total quantity required for consumption. The imports of flax material into Ireland for the last ten years average above 30,000 tons per annum. Under better agricultural conditions a large part of this imported flax might be replaced by flax grown in Ireland.

The imports of flax, &c., into the United Kingdom for the year 1902 are returned as follow :—

	Flax.		Tow and Codilla.
Tons	... 58,159	...	15,452
Value	£2,592,912	...	£351,478

Of the above imports of flax, 38,121 tons, value for £1,414,581, came from Russia; 15,502 tons, value for £987,277, from Belgium; 3,241 tons, value for £152,210, from Holland; and the small remainder from other countries not specified. The average value of the above flax imports from Russia is thus about £37 per ton, while those from Belgium average about £64 per ton.

The Effects of the American War.

The American war has already been mentioned, but must be further alluded to as having had an influence on the whole subsequent history of the linen trade that no one could then have anticipated. During the inflation of linen, caused by the extreme scarcity and consequent famine prices of cotton,

some rapid fortunes were made; and there was a strong desire on the part of many to participate in so lucrative a business. That period, therefore, witnessed large extensions to many existing concerns and the erection and equipment of some new ones, some of the smaller of which had but a brief existence. But it also witnessed a willingness on the part of many proprietors to sell their concerns, the buyers being in most cases limited liability companies formed for the purpose. Comparatively few of the concerns that thus changed hands at that time have proved satisfactory investments for their shareholders; and in the majority of cases—with some few notable exceptions—many of them have become, and seem likely to continue, non-dividend paying. Some have gone into liquidation, while others have been reconstructed or have readjusted their capital accounts. The continued existence of some of these concerns, which would have been impossible were it not for the tenacity of life imparted to them by the elasticity of credit attaching to the limited liability system, is detrimental to their better-off competitors, the impecunious producers breaking prices, which others are virtually obliged to follow, and the trade is thus deprived of a fair return on the capital invested in it. In fact, credits are too lax for the permanent good of the trade.

It was feared that the increase in machinery which took place during the period of inflation, might leave the industry saddled with an over-production

when the textile trade of the world should have resumed normal conditions; but, on the other hand, it was argued that the linen trade had got a tremendous "fillip," part of the effects of which it was hoped would be permanent; besides which it was not unreasonable to assume that the ordinary growth in the use of an article like linen, which, in its various fabrics, had for ages been regarded as one of the first necessity for domestic purposes, personal wear and table use, would soon overtake any surplus production.

Less Demand for Linen.

Such expectations, however, were doomed to disappointment; and for various reasons, some plain enough, others obscure, the linen trade of the world has not been expansive of recent years—indeed, decidedly the reverse; but in Ireland the trade, as compared with other countries, is more than holding its own. Quite recently, the spring and summer of 1903, witnessed many welcome signs of general revival, stimulated no doubt in part by the production of attractive novelties in fabric and colour.

The great competitors of linen are cotton and wool, especially cotton. Wool only competes as clothing; the lighter fabrics that are now produced in it commend themselves to many on account of the saving of expense and trouble in frequent washings. Cotton is a much more serious

competitor. Its cheapness, its superficial resemblance to linen which the superior finish now imparted to it has increased, and the much greater variety, especially in colour, in which it has hitherto been produced, are all so much to its advantage that, while we regret, we need not be surprised at, the larger share of public favour which it receives.

Changes of fashion are partly responsible for the diminished consumption of some kinds of linen fabrics. In my younger days no one calling himself a gentleman wore (in the North of Ireland at least) anything but linen shirts : now but few do so. Then linen ducks and drills were frequently worn as summer trouserings: one never sees them now. Then no ladies used anything but (linen) cambric handkerchiefs ; while now cotton handkerchiefs, plain and printed, are sold in enormous quantities, both at home and abroad. Some important firms in Belfast, who were formerly doing business in linen and cambric handkerchiefs only, have turned their attention in part, or in some cases even entirely, to cotton. The diminution, almost cessation, of the use of linen scarfs and hat bands at funerals must account for a considerable total.

It has often struck me as strange the large profits that retail drapers charge on linens of all descriptions, as compared with cottons. Such a practice must have a deterrent effect on the general use of linens ; but there is no moral turpitude in it such as there was in those frauds, so properly exposed in the

prosecutions brought by the Linen Merchants' Association against certain people for selling union, and even all cotton goods, as "pure linen." I am afraid, from the disclosures then made, that such frauds are only too common. The public are cheated, and the trade suffers from the disappointment caused by the unserviceable character of the so-called linen.

New Outlets.

The Association within the last few months very properly inaugurated a vigorous fresh campaign against such frauds, and many prosecutions, followed by convictions, have resulted.

To protect the public from fraud it has been suggested that there should be some mark of identification on linen as there is now on plate, and I do not see why there should not be such. A fine damask table-cloth, for instance, is much more valuable than a few silver spoons.

One sometimes hears the complaint from old housekeepers that linen is not so durable as it used to be. That may be so, but only to a limited extent; goods must now be bleached farther to meet the inexorable public demand for pure white linen; but the *real* ground of the complaint is to be found in the abuse which linen now receives at most modern laundries, and the too free use of chemicals in these establishments.

One new outlet for linen yarn which promises well

has lately been found through the ingenuity of a gentleman resident in Denmark. He was a sufferer from rheumatism, and his physician advised him to substitute linen for the woollen underwear he had previously used; so he commenced and finally worked out the problem of adapting something in the nature of a knitting machine to the peculiarities of linen yarn, and the result is the production of a new and extremely comfortable material for underwear (I speak from personal experience), which is already favourably reported on by the medical journals and by many leading medical men in England and elsewhere. This new material is known in the trade as Kneipp linen mesh underwear.

Several firms are now producing some very attractive novelties in fancy fabrics; and the richness and variety in make and colour seen in the dresses and decorations at the "all linen ball" at Belfast lately were a revelation to many even in the trade.

New and beautiful designs in damasks charm and delight the eye; our damask manufacturers are fully alive to the importance of continually putting some new design before the public, while a leading damask manufacturer lately told me that some quite old designs are again coming into vogue, like Chippendale or other old furniture. The damask department of the trade thus keeps flourishing.

Continental Competition.

Prior to and about 1836, Irish yarns and linens

were being sold in considerable quantities to France. The business was of sufficient volume to encourage a shipping agent to despatch a vessel direct to a French port, and in December, 1836, the first cargo of Belfast yarns and linens sailed for Dunkirk. The project was successful, and it was so followed up that in 1839 a steamer commenced plying once a fortnight from Belfast to Havre, carrying yarns and linens, while there were also occasional sailings to Antwerp, Dunkirk, and Nantes.

It will thus be seen that the various linen manufacturing countries in continental Europe had been large buyers of Irish yarn, and some of them good customers for linens also. The enterprise of the linen magnates at Lille, Ghent and Bielefeld, and in Silesia and Bohemia, did not lag long behind that of our own spinners, and mills sprang up in many places. While business was very brisk, these mills only partly supplied the home demand, and recourse continued to be had to the United Kingdom for considerable quantities of certain kinds of yarn which we were able to produce better and cheaper than the Continent.

As the continental consumption of linens diminished, the production of yarns in the mills there became able to meet not only local requirements in the kinds produced, but also to leave a surplus of such over for export. These consisted for some time chiefly of the medium and lower counts of linen yarns, which their closer proximity to the Russian

flax markets, the longer hours of labour, and the lower wages prevailing there enabled them to sell at prices with which the British spinner could not compete. English spinners felt the pinch first, with the result we have seen of the almost total extinction of the industry there. Certain Scotch spinners felt it next—especially those who were engaged in wet spinning. In Ireland it was less severely felt, as the figures already mentioned as to the comparatively small decline in our spindles abundantly prove. The results are very curious; and the figures disclose a most remarkable change in the balance of the trade; in fact, a complete turning of the tables.

In 1861, the year the American war broke out, the exports of linen yarn from the United Kingdom were returned at 12,045 tons, of a declared value of £1,622,216.

In 1864, when the war was at its height, these figures had risen to their maximum of 17,936 tons, value for £2,991,969, showing an increase in the three years of 5,891 tons, nearly 50 per cent. in quantity; and of £1,369,753, or about 84 per cent. in value. By 1901 the exports had fallen to 5,791 tons, value for £824,900, a decline from the 1864 maximum of 12,145 tons in quantity and £2,167,069 in value. The year 1902 shows a small increase of exports of linen yarn, viz., 6,346 tons, of a declared value of £842,200.

The average value per ton of the exports of linen yarn for the three years mentioned is as follows :—

1861, £133; 1864, £167; 1901, £142 10s. This is an interesting comparison, and it proves that it is now the better qualities and finer counts of Irish yarn that are exported; as, notwithstanding the extremely low prices lately current, the average value of the 1901 exports is £9 10s. per ton higher than that of 1861, when prices were considerably higher.

A Boon to the Weavers.

The competition of imported yarns is more felt now in Scotland than in Ireland, its effect in England having had a good deal to do with the virtual extinction of the spinning industry in the latter country. The recent large increase of flax spinning in Russia has been mentioned. Protected by high—now quite prohibitive—tariffs, Russian spinners defy all outside competition within the country. Some French and Belgian spinners, to evade the duty, erected mills in Russia in excess, as is now apparent, of the country's requirements, and Russian mills are now sending considerable quantities of yarn into these countries.

Although it may be against Irish spinners, and undoubtedly presses still more severely on those in Scotland, one must admit that the importation of these continental yarns has been of material service to other departments of the trade, weaving, bleaching, and finishing; for, without those supplies of moderate-priced yarns of kinds that our home spinners could not produce so cheaply, one cannot

see how certain hard-pressed sections of the manufacturing industry could have survived; and, had they gone, the advantage to labour, to the after processes, and to the trade at large, would have been lost too. While sympathising, therefore, with the Scotch spinners, we feel that, so far as Ireland is concerned, her manufacturing, bleaching, and finishing departments benefit by these cheap foreign yarns.

It is only natural to expect that yarn prices would show extreme fluctuations when the industry was exposed to such disturbing influences. I shall briefly illustrate this by quoting the prices (per bundle of 60,000 yards) of one standard number each of line and tow yarn at the dates mentioned, viz. :—

		80's line weft.		25's tow weft.	
		s.	d.	s.	d.
December, 1860	before the American war.	4	3	6	3
August, 1864	height of „ „	6	7½	10	4½
December, 1865	after its close.	6	1½	8	0
„ 1868		5	3	6	10½
September, 1870	Franco-Prussian war.	3	4½	5	9
December, 1870		3	6	5	9
„ 1871	war over.	5	1½	6	9
„ 1875		4	6	6	9
„ 1880		4	0	5	6
„ 1885		3	4½	5	1½
„ 1890		3	7½	4	5½
„ 1894		2	10½	4	4½
„ 1895	a period of great depression	3	0	4	9
„ 1897		2	10½	4	3
„ 1900		4	0	5	3
Maximum, August, 1864		6	7½	10	4½
Minimum, 1894 and 1897		2	10½	4	3
Extreme fall from maximum to minimum		3	9	6	1½

or 57 per cent. and 59 per cent.

The figures given show the extremes of the inflation of the American war time and the depression of some of the years in the last decade—1890 to 1900—when it is not too much to say that the trade came through a most severe crisis, resulting in disaster to some; but from which the industry on the whole emerged fairly well.

The manufacture of linen threads has long been an important branch of the flax industry, giving employment to a large number of operatives in several extensive concerns in the three kingdoms.

The export branch of the thread business, however, is by no means what it was. High tariffs in the United States put an end to that, the result being that the principal makers of linen thread have established their own thread works in the States, importing their flax hackled, that is dressed, ready for use from the parent works in this country. If some method could be discovered to make linen thread more elastic without impairing its unrivalled strength, it would be invaluable to the trade.

Progress of the Weaving Branch.

Let us now look at the next process in the linen industry—weaving. Within living memory that was all done by manual labour. The power loom had long since come to be of general application in the cotton and woollen trades, and many and earnest were the efforts to apply it to linen; but serious

difficulties were encountered, and had to be overcome before the weaving of linen yarn by power became a practical and commercial success. The *want of elasticity* of flax yarn, notwithstanding its greater strength as compared with cotton, had long barred the way of the power-loom, which had not the consideration, so to speak, the give and take of the hand-loom weaver, for the rigidity of the linen warps. Improved mechanical arrangements in the looms, and the application of a newly-discovered superior dressing for the warps, which had the effect of making them softer and more elastic without impairing their strength, finally prevailed, and the power-loom came to stay, as a permanent and most important factor in the Irish linen industry, some time in the early fifties. The report already quoted from states that in 1850 there were 88 linen power-looms in Ireland. At the end of 1899 there were 32,245.

The first return in the report after 1850 is for the year 1856, and the number of looms is given at that time as 1,871. Since that period the progress has been steadily and quite uninterruptedly upwards.

In three years, by 1859, the number of power-looms had about doubled to 3,633. After the end of the American war the number of looms, which, before its outbreak, had stood at 4,933, had increased in 1866 to 10,804. The increases since have been rapid and constant till the last year.

In 1871	the	number	is returned	at 14,834
„ 1881	„	„	„	21,779
„ 1890	„	„	„	26,592
„ 1900	„	„	„	32,245
„ 1902	„	„	„	30,927

Of these looms a considerable, but unascertained, number are employed on union goods.

The quantities and values of the linen exports from the United Kingdom can be found by those wanting such information more in detail in the returns of the Board of Trade. For our present purpose it may suffice if I quote the total declared values of the exports of linen manufactures of all kinds, including threads, for the following years :—

1850	... ...	£3,947,682
1860	The year before the American war ...	4,804,803
1861	The year it broke out	3,852,341
1865	When it was at its height	9,156,990
1870	A normal state of affairs	7,248,345
1880	„ „	5,836,019
1890	„ „	5,710,168
1900	„ „	5,224,594
1901	„ „	5,020,499
1902	„ „	5,427,969

The last thirty years thus show a gradual decline, except in 1902. The above figures include British as well as Irish manufactures; but they do not show the value of the goods consumed in the United Kingdom, which would reach a very considerable total. I must also point out that the figures just quoted deal with values only; if quantities were also considered, the decline in the volume of trade

would not be nearly as great, as values considered alone, would indicate, prices being now on a low level.

Reduced Demand for Sails.

From the foregoing it will have been observed that the coarse end of the trade has suffered more from foreign competition than the finer ; but another cause, entirely apart from the foreign bogey, has militated severely against one former important branch of the trade, especially in Scotland : we mean the gradual displacing of sailing ships by steamers, and the consequent diminution in the consumption of sail canvas, the manufacture of which was a very important branch of the flax industry in Scotland, especially in Forfarshire, but in other places also ; in the south-west of England, especially Somersetshire ; in the Isle of Man, and to a small extent in Ireland.

In reply to an inquiry, I am obligingly informed by Mr. James A. M. Heyn that :—

	Sailing Vessels.	Steamers.
In 1852 there were on Lloyd's Register	10,241	156
While in 1902 the figures have altered to	2,689	8,352
Showing a falling off of	7,552	—

These fifty years, therefore, have witnessed the utter disappearance of three-fourths of the sailing vessels, which prior to that carried on most of the oversea and coasting trade of the country. The change in the Roval Navy is even greater in pro-

portion. Fifty years ago steam was only beginning to be introduced—and that, too, only as an auxiliary —to full-rigged ships into the Navy. Some of us are old enough to remember the splendid fleet of first-class line of battleships and frigates sent out under the command of Sir Charles Napier to the Baltic in 1854. Although most of these, but not all, were provided with some moderate steam power, to be used in emergencies, all were full-rigged ships. Now there are practically no sailing vessels, except for training purposes, in the Navy. No wonder canvas-makers, except those with special trades, have fallen on evil times; but still the ships that remain, the large fleet of yachts, and the requirements of tent-makers still account for a considerable total yearly consumption of canvas, into the manufacture of which a large quantity of Irish hand-scutched flax used formerly to go.

The Bleaching Industry.

Bleaching has always been an important part of the linen industry, and owing to the admitted superiority of the Irish bleach, a considerable quantity of linen is sent from Belgium, France, and Germany to be bleached here and returned to those countries for sale. This excellence is doubtless due to our humid, temperate climate. Owing to the nature of the business bleach-greens were first established, and must perforce remain, in country districts.

The sending of linen goods from France and Belgium to be bleached in Ireland is very curious when one considers that—

1. Ireland imports flax from those countries.

2. That flax is spun in Ireland into yarn, some of which is sold back to France and Belgium.

3. There it is woven into linen, some of which is sent back to Ireland to be bleached and finished; and then—

4. It goes back to the countries whence it came for sale.

Some of the flax, therefore, in one form or another, makes no less than four journeys, and some of the yarn three journeys, before the finished goods find a place in the merchant's warehouse.

The hours of labour in factories in the United Kingdom are limited by statute to 55½ per week; whilst in France, Belgium, Germany, and Austria the hours, as I am informed, are 66 per week. I understand France intends to come down, in two steps of three hours each in 1903 and 1904, to 60 hours per week.

As the cost of flax-spinning plant is extremely heavy, any reduction of the output is a serious factor in increasing the cost of production.

Another difficulty with which the trade has been confronted is the serious rise in foreign tariffs on yarns and linens which has taken place since 1870. The Customs Duties of the United States of America, of France, and of Germany, the three most impor-

tant customers for Irish yarns and linens, have been increased by about 50 per cent.; while Russia has imposed duties so high as to be prohibitive to the lower and medium grades which come into competition with similar articles manufactured in that country.

Prior to the Spanish-American war, which resulted in the loss of Cuba to Spain, the Cuban tariff discriminated very severely between goods produced in Spain for the Cuban market and those going to Cuba from other countries, the result being that, even before the war, Havana, a most important market, was almost closed against Irish linens, the trade, or part of it at least, going to Barcelona and Saragossa. The result was most beneficial to the manufacturers in those cities, who, protected against all foreign competition in their own colony, reaped a rapid and abundant golden harvest. To supply the increased demand thus artificially created the manufacturers in Spain had recourse to other countries for the yarns they required, of which Ireland supplied a fair quantity, so that a portion of the trade with Cuba direct that was lost to the Irish linen merchant and manufacturer came back, indirectly, to the Irish spinner.

There can be no doubt but that the great enhancement of cost to the consumer caused by the high duties militates against the natural growth in the consumption of linen in the United States, where there is no home production of linen goods.

The duties charged in France, Belgium, Germany, and Austria enabled those countries to establish and maintain flax-spinning mills in a way that they could not have done had the industry not been protected there in its infancy. The markets of those countries are therefore now to a large extent closed against us; but we are still able to meet them when we meet on equal terms on neutral ground, unless in some special articles, such as the yarns mentioned earlier, where natural and other causes, such as locality and hours of labour, come to their assistance.

THE SILK TRADE

By Matthew Blair

(*Chairman of the Incorporated Weaving, Dyeing, and Printing College of Glasgow*)

PREVIOUS to the Cobden Treaty, which was negotiated in 1860, the silk trade was protected from foreign competition by a duty of 15 per cent. The consumer of course paid this enhanced price, for unless the home manufacturer can get a higher price under Protection than under Free Trade, he has no motive to desire Protection.

Aided by this bonus the silk trade, which then was mainly a hand-loom industry, increased greatly. Capital was attracted to it, and, for a time, it was very lucrative for the manufacturers. The work-people, however, did not share in this abnormal profit. They had no protection for their labour, and had to accept the wages of competition. Periods of depression were frequent, and relief works had often to be started to keep the weavers from starva-

tion. We have no experience of such things now. Whatever advantage the period of Protection may have been to the masters, it was too often a time of suffering for the work-people.

This high Protection had an evil effect upon the manufacturers themselves, and sadly unfitted them for withstanding the coming storm.

The Cobden Treaty in 1860 removed this Protective duty, and left the silk trade to fight its battle in the open field.

The result was quickly disastrous to a large number of firms. Spoiled by the previous high Protection, they were not in a position to compete. Many mills were closed, and in some districts silk weaving entirely disappeared. The diminution of silk throwing and weaving in Congleton and other towns, which is undoubted, is being now pressed upon public notice as a reason for going back to some form of Protection.

A history like this naturally gave rise to the idea that the silk trade could not exist in this country unless under Protection. As this involved some other industry paying for support of the silk trade, it was a lamentable confession, and even a condemnation of all who were engaged in such a business, but it was not at all an unnatural idea for a manufacturer to hold, and it is still widely entertained.

Protection had brought the silk trade to this pass, that it could not be carried on to the same extent as in the past, unless one of two conditions were ful-

filled—either the consumer must by monopoly be compelled to pay whatever price might be required to keep the silk trade highly profitable, not only for those already engaged in it, but for all new-comers who might be attracted to the business by the abnormal profits.

Or, alternatively, a supply of workers must be got who would accept wages as low as were current in more backward countries, such as Italy.

The first condition would have involved, immediately, the sacrifice of the French treaty of 1860, and would ultimately have involved a system of bounties to British silk manufacturers, for by no other means is it possible to maintain a high level of profits when internal as well as external competition is active.

The second condition—the low-priced labour—was impossible, because the Free Trade policy had created a great demand for labour in other industries, and had consequently sent up the price far above the level in the protected countries of the Continent.

This was the exact economic position, and the only way out of it was by improved machinery and advanced industrial methods.

Hypnotised by Protection.

That course was not taken. Many of the rich throwsters and manufacturers retired from the business. Others had not the necessary courage or

capital to meet the competition. They lamented, and still go on lamenting, the diminution of the hand-loom weaving. They stuck to methods where hand labour was a large part of the cost of production, while progress lay in the direction of labour-saving appliances. This is the way that America succeeds, even with dear labour. As little as possible of it is employed. The absence of inventions and improvements in the thrown silk trade, compared with other industries, is a significant feature.

In arranging a National Fiscal Policy, statesmen have to look at the interests of the whole community, and not at a limited section of it. A business may be such that it could not be conducted in this country, unless highly protected; wine growing, for example. But it would be inequitable for a Government to compel a certain number of its subjects (who pay taxes to be protected from injustice) to give an exorbitant price for a special commodity, merely to keep a certain number of men engaged in the production of that article, and it would be all the more so if it were an article of luxury. So long as the manufacturers were thus protected, they would never rouse themselves to find if, by improved methods, they could do without being supported by this drain on the pockets of the consumers.

In the same manner, the assertion frequently made, that the Cobden Treaty was the sole cause of the destruction of so large a part of the thrown silk trade, overlooks altogether the other, and very

potent, causes which were operating at that time. We will endeavour to show that the thrown silk trade did not read quickly enough the signs of the times, else much of the dislocation might have been avoided. Too often "the forgotten factor" proves to be the most important, and in this case there were many factors whose influence has not been sufficiently considered.

Ruined Throwsters: Prosperous Spinners.

But, first of all, it must be remarked that the silk trade which did suffer, was the thrown silk branch.[1] No doubt at that time it was the most important but it was not the whole silk trade of the country, and it is quite erroneous to talk of the silk trade of the country being ruined, when there is a large part of it which has never suffered in the least. We must look at the whole trade, and the subsidiary occupations which it affects, and all the workers engaged in it, and in this view, it will probably be found, that there are more people employed, more wages paid, and more money made in the silken trade of the country now than at any previous period.

For example, spun silk, which is now a large, and has always been a profitable industry, was in 1860

[1] Thrown silk is produced from the long strands that are drawn off direct from the cocoon. Spun silk is produced from the short, tangled strands that have to be straightened before they can be used.

only in its infancy. The Lister comb had not yet entirely revolutionised that business. The manufacture of silk for sewing, embroidery, trimmings, furniture and decorative purposes, was a considerable business. This secondary employment for silk was previously limited by the high prices of Protection, and had a considerable extension, as soon as a free market was declared. Fabrics of mixed silk and wool or cotton, have also been a large trade. Yorkshire and Scotland have taken up this branch, which Cheshire appears to have lost.

Then there is the large and necessary element of the distributors. It is the fashion to rail at the merchant, as a vampire that sucks the blood of the trade, and who is quite unfitted to take an impartial view of the case. Ideas of that sort may be disregarded. The machinery of distribution is just as necessary as the machinery of production. Commerce does not allow of the existence of any useless people. When they are not wanted, they make no money, and thus get a broad hint to clear out of the way. As long as they do exist they are part of the trade. Anything that increases their operations is an increase of the trade in which they are engaged. The merchants are merely the salesmen and buyers of the producers and consumers.

Viewed as a whole, the silk trade of the country has not decreased, but is larger to-day than ever it was, and we may say also that it is more lucrative. Its very existence and extension prove this. If the

trade were not very profitable, the foreigners would not be so eager to possess it.

Killed by Kindness.

Reference has already been made to the demoralising influence of the high Protection that preceded the treaty of 1860. On this subject we quote a remarkable passage from a paper on the silk trade, written in 1887 by the late Mr. Thomas Dickins, of Middleton, who was well informed on this subject:—

"Many of us well remember the good old days, so-called, when our manufacturers were being enriched by the killing kindness of Protection. It was natural to remain contented with such an easy and pleasant way of gaining wealth. Warp and weft had simply to be thrown together, and—the product always realising a large profit—there was no apparent reason for disturbing the crude system which existed. The dark clouds, even then looming in the distance, were not perceived through the misleading brightness which surrounded the British silk manufacturer."

This is a significant statement. The manufacturers were spoiled by success, and had dropped into crude methods. Many of them were rich, even too rich. The Rothschilds were throwsters in those days. It was a common opinion that a business was not worth having, unless it allowed the throwster to go a-hunting three days a week in the season.

The present writer knew one of these fortunate gentlemen. Needless to say that he is not now a throwster. He retired in time, became a county magnate, and goes a-hunting on the profits made by his ancestors out of the past Protection.

It was not always want of money that prevented the silk trade contending with the new conditions. Neither was it ignorance, nor lack of ability. Very often it was too high notions of the profits that the trade should return. All this was begotten of the previous high Protection.

The change from a system of Protection to Free Trade is undoubtedly a step, which, for a time, produces great dislocation, and even suffering, to some classes. Any industry that has been bolstered up by a high Protective tariff stands in a peculiarly risky position. The spur of competition is a-wanting, and indifference to improvement and economy is the natural result. But trade is too keenly cut now for the old easy-going style to prosper. Machinery has created new conditions. Business cannot now be profitably conducted unless equipment is up to the latest inventions, managed on a large scale, and with the highest technical skill. Even then an abnormally high rate of profit cannot be expected.

Small Unprogressive Firms.

The silk firms in existence in 1860 were numerous, and many of them not large. On the average they were little prepared for the storm. The

weaker ones were quickly weeded out. The larger ones curtailed their production, and as the trade was not taking off the silk, many of the wealthy throwsters retired from the business.

But those manufacturers who were in a large way, with capital and modern ideas, although hard hit by the Cobden Treaty, were not destroyed, and many of them are still to the front. The trade, if not so large as formerly, is founded on a far more secure economic basis. The manufacturers also have the honourable satisfaction of knowing that they are not subsisting on a precarious "rate in aid," levied by force of law, from their friends and neighbours the consumers.

Another important matter that was overlooked by the thrown silk trade in 1860, was the complete change in the character and wants of the buyers, which arose as a consequence of the transfer of production of textiles from hand labour to that of steam power.

Machinery is employed solely because it produces more goods at less cost per article than can be done by hand. But machinery must be kept running, and a market must be found for the product. This extended market must of necessity be a less wealthy one. Hence it is always the case that machine-made goods must be of a cheap class. Cheap goods are not durable, but the new class of customers who came upon the market did not expect or desire them to be so. To be new, fashionable, and cheap, are

the recommendations to this class of buyers—a race clearly produced by the vast extension of business, and the increase of wages among the industrial classes, which has been a consequence of our adoption of a Free Trade policy.

The silk manufacturer of 1860 hardly recognised this fact. Silk had been a costly article. A dress descended from generation to generation, and consequently had to be of durable material. The silk trade seemed for a long time to be under the belief that this was the only kind of silk goods that should be made. The foreigner did not make this mistake. He found buyers in our market who cared nothing for the silks as "worn by our grandmothers." These buyers would not have such goods. They entertained wholly different ideas. Possibly they had more money than taste or thrift. They wanted dress stuffs to be cheap and fashionable, and to be frequently changed. The foreign manufacturer wisely judged that his business was to supply what the public wanted. The home manufacturers did not bestir themselves to produce goods for this class of people, and the merchants had to go abroad to supply the demand or lose their trade, and thereby diminish the whole silk trade of the country.

When weighted silks (which after all are only goods having a particular finish) were put upon the market, many of the silk manufacturers protested that they would never make such goods. They would stand on the old lines. This was not the way

to appeal to the new class of buyers, who paid no attention to it, but went on buying what they wanted.

The silk-dyers also for a long time maintained this mistaken view. They would not, or could not, dye the weighted silks, till they drove the bulk of the dyeing trade over to Crefeld, and have now a hard struggle to get it back again.

Want of Technical Education.

Another great weakness of the silk trade at the time of the Cobden Treaty, and which was also a result of the previous Protection was the indifference to all technical education. In this they were not alone. Many other industries were equally blind to the signs of the times, and suffered accordingly. They were very slow to realise that the change from hand labour to power production which was going on in every trade had destroyed the apprenticeship method of instruction. Under the factory system the workshop was no longer the training school for future manufacturers. Scientific education in industrial methods was necessary if we would hold our position in the world's race.

But not till the ribbon trade had practically left Coventry, was any attempt made to establish a Technical school, and for many years this was the only institution of the kind in the country; while on the Continent great technical schools for silk and silk-dyeing and finishing had been long established.

There were also in America institutions of this class which are not yet equalled in this country.

It is difficult to convince some old thrown silk manufacturers or throwsters that they have anything to learn. The writer was assured by one of them that he had the very best machinery, in proof of which statement he boasted that some of it had been running for eighty years unchanged. This, although an extreme case, is typical. An American would have boasted that he had not a machine in the place that had been running eighty weeks. He does not believe in old machinery. Few improvements on thrown silk machinery have been made in this country. The "Grant Reel," which was a great advantage, is an American invention, as is also nearly all the quick-running and automatic machinery now so much coming into use in many industries. The thrown silk trade, as a trade, never really wakened up to the necessity of technical education.

Dear Labour a Sign of Prosperity.

The low price of labour on the Continent is continually quoted as the reason why the British silk manufacturer finds it difficult to compete, and no doubt this is perfectly true.

But this is a factor that all advancing countries must take into account. An industry which can only exist by a supply of poorly-paid labour is in a position requiring reform. It is behind the age.

Dear labour in our country is not a sign of decay, but of prosperity. It shows that our workers can find employment at better rates. We could not bring down the price of labour, even if this were absolutely necessary in order to save the silk industry. The workers could not be found at the low wages. The price of labour is regulated by the demand for it, and not by the wishes of the silk manufacturers.

But many instances might be quoted to show that dear labour need not stand in the way of producing goods cheaply. Muslins made by cheap Indian labour were at one time imported. Our workers could not have competed, even at starvation wages. But the spinning jenny and the power loom altered everything. Relative to the product, labour is now much cheaper in Lancashire than it is in India, and muslins are now exported to that country.

Advancing countries must avoid competing by means of hand labour. The fact that it was mainly a hand-loom industry was one of the difficulties of the silk trade. The hand looms diminished rapidly, and this is regretted. But why should it be regretted? Progress was involved in the change. The hand-loom weaving was bound to go down, as it did in other textile industries where the Cobden Treaty did not affect it.

The future is with mechanical labour. Automatic machinery is coming fast into use in all directions. The manual labour upon any article will soon be a

most infinitesimal element in its cost. Like the muslin referred to, the trade will go to where the mechanical production is most advanced. America is showing this every day. Labour is scarce and dear there, but the difference is more than made up by the perfection of machinery. It is vain to wail over the cheapness of foreign labour. That cheapness will soon be of no importance. It is to the perfecting of machinery that we must look for progress. The silk trade, and every other trade, will prosper on these lines, and on no others.

Placed in this weak position, the thrown silk trade was unable to stand in open competition, and gradually shrank in volume. Possibly had the trade been wiser and more far-seeing, it need not have succumbed, but the fact remains that it was greatly reduced, and one of the main causes was the weakness begotten of the benumbing influence of Protection.

The wholesale houses being unable to supply the growing demand for cheap and light goods, from home producers, had to look abroad. This is the real reason of the growth of the large silk mercers of the West-end of London, who have given so much employment to dyers, printers, and dressmakers. The new class of buyers wanted fashionable and cheap goods, and had money to buy them, and would have wanted them and bought them, in preference, even if there had been a tariff against them. This is exemplified in America. Certain

goods of foreign manufacture are the fashion there. The buyers desire them, and continue to buy them, in preference to goods of native production, even although there is a high tariff.

This is why the import of foreign-made silk goods into Britain became large and remains so still. No doubt this is a loss to individual manufacturers, who are not able or willing to compete, but it is not a loss to the country. It is merely a displacement. The market is there yet, and open to all home producers, whenever they can place upon it an article which the buyers wish to buy, at a competitive price.

Industries Dependent on Imported Silk.

The large employment which imported silk goods have given to various industries in this country must not be overlooked, in considering the question of the effect of freedom on the whole silk trade of the country. The silk imported in the form of tram and organzine has to be dyed and woven here, and the large range of selection thus offered to the manufacturers is willingly accepted—a proof that it is an advantage to them. There are numerous branches of silk manufacture and allied industries which could not exist without imported material. Silk-dyeing, for example, would be ruined in this country unless the dyers were allowed freely to purchase dye stuffs in Germany. In doing so they

show that they are the most enlightened and consistent Free Traders in the silk trade. The plush and velvet trades also, depend largely on imported yarns.

Many of the silk textiles imported, especially those from Japan, are in the undyed state, and have afforded great employment to dyers and printers, and created a trade that did not exist before. Many of these silk articles also are used in combination with home-made goods, as trimmings, and increase the sale of such textures.

The spun silk branch, as already mentioned, has grown vigorously, and is now a large and profitable industry, able to hold its own against the world. It can ship to America in the face of a tariff of 35 per cent.

This great extension has taken place since the Cobden Treaty. The industry, therefore, grew up under conditions of freedom, and hence is founded on a solid basis. Yet its progress is less due to Free Trade than to causes that might equally have aided the thrown silk trade had that industry been sufficiently alert. It was the power of the inventor that primarily made the spun silk trade prosperous, notwithstanding the competition of cheap foreign labour.

The Lister comb was not the only, but it was the principal, agent. Invention and improvement have been active in this branch to a degree unknown in the thrown silk trade. By the change from "short"

to "long" spinning they have literally succeeded in making "a silk purse out of a sow's ear." It is always so. Enterprise and advancing ideas put into a trade carry it over many an obstacle, and even defy tariffs. Waiting and longing for the artificial conditions of Protection is a pure waste of time.

There is no real reason why even the thrown silk trade might not be largely extended under the present conditions. The home market is free to us, untrammelled by tariffs, and at our doors. It is a large market, and a profitable one, as is proved by the eagerness of the foreigners to possess it. The trade, therefore, will do wisely to hold to a fiscal system of freedom, and base its success on sound economic lines, and not on the shaky foundation of Protection.

At the same time it must be admitted that it is very aggravating for the silk manufacturers, and for all producers, that while we freely open our ports to the whole world, other nations strive by heavy tariffs to exclude our commerce from their shores. Even when, in face of these obstacles, a trade begins to grow up, they immediately make some new modifications of their tariff with a view to strangle it.

All the time they are eager to increase their own export trade, even to the extent of menacing us for even thinking of following their restrictive example, and are feverishly anxious to promote the policy of "the open door" in every country but their own.

The gross selfishness and injustice of such treat-

ment, to say nothing of the insolence sometimes attending it, naturally stirs resentment, and it is no wonder that men so abused should think of some form of retaliation.

Arguments based on the imports of silk must take into account the change of route occasioned by the opening of the Suez Canal.

Prior to that event the bulk of the Oriental silk for European consumption came round by the Cape of Good Hope, and London became the convenient *entrepôt*, from whence the silk was afterwards exported to the European countries engaged in that industry.

Since the opening of the Suez Canal silk intended for Central Europe naturally enters by the ports of Trieste, Genoa, and Marseilles. The loss of this *entrepôt* trade is no doubt to be regretted, but it was inevitable. It was not caused by the Cobden Treaty, nor could any tariff alter it.

This natural change of route must not be overlooked, else statistics of import become quite misleading.

The Risks of a Tariff War.

Care must, however, be taken that resentment does not obscure our vision of the consequences of any tampering with economic law. Those who think that prosperity can be created by any jugglery of tariffs venture upon risky ground.

If we viewed international commerce as a war, it

would no doubt be quite legitimate to use such a weapon as retaliation to bring our opponents to a more reasonable frame of mind. We will all be quite ready to consider any proposal of this kind when it is made, and when we can see what it involves. It is at best a blind game, in which there is the greatest danger that you may hit the wrong man.

In the meantime, until something practicable is proposed, we may bear in mind that international commerce, rightly understood, is not a war. The true idea is that it is a mutual benefit. It is a conflict in which both sides can win, and must win. It is, like mercy, "twice bless'd—it blesseth him that gives and him that takes." The loss comes in, not in exchange, but in its being artificially hindered and restricted.

We should not allow foreign nations to suppose that they are conferring any special favour on us by purchasing our goods. Nations as nations do not trade. It is the merchants who do so, and unless they see a chance of profit to both parties they will not operate. All international transactions are profitable to both parties, else they would never take place.

Much unnecessary alarm is entertained about amount of exports and imports. A large export simply means that at that time the owners of these goods on the one hand, and the would-be owners on the other hand, find their mutual profit in making the exchange. A small import equally means that

the prices do not allow of a deal at that time. There is no loss to lament about, and the so-called "balance of trade" is mainly of interest to bankers, to enable them to arrange the rate of exchange. Every sale and purchase is "balanced" by the payment of it.

The best attitude is that of ordinary commerce. If foreign nations refuse to let their people buy from us, they are at liberty to do so. It will be their own loss. No merchant ever thinks that retaliation is the way to bring back a customer who chooses in the exercise of his undoubted right to buy his goods elsewhere. Let him alone. When he finds he can get a good bargain here, he will come back of his own accord.

These heavy tariffs, whatever they mean, most certainly prove that not one of these countries can compete with us in the open market. They are afraid of us. They plainly believe that our powers of production are superior to theirs. Their tariffs proclaim this fact to the whole world.

Our true policy is to hold for a free market and to improve our methods. Let our success, whether great or small, be founded on natural law, and it will be enduring.

THE DEVELOPMENT OF BRITISH BANKING

By a Practical Banker

THE fundamental features of the development of British Banking and of the London Money Market during the last half-century are—

1. The increase of branch banks in London and in the country generally.

2. The opening in London of branches of foreign and colonial banks and the employment in London of foreign money.

3. The development of the bill-broker.

The first point for consideration, namely, the growth of branch banks, presents some interesting features. The development of banking in London, the suburbs, and the country has not taken the form of the creation of altogether new banks, specially adapted to the needs of each particular locality, but has been brought about by the opening up of new branches by the existing banks. Indeed, the absence of any successful attempt for

several years to establish new banks, either private or joint stock, is so marked that one is forced to the conclusion that the ordinary depositor will only entrust his capital to institutions which have shown, by some years of prosperous existence, that confidence may be reposed in them. As to private banks, the remark of the late Mr. Bagehot is probably true, that "men of first-rate wealth will not found one, and men not of absolutely first-rate wealth cannot." "A large bank," he adds, "always tends to become larger, and a small bank to become smaller." On the other hand, the joint-stock banks, taking advantage of the facilities offered for the obtaining of new capital by the system of limited liability, have extended their operations on every side. Indeed, so completely have the existing institutions responded to the calls for branches that England as a whole may be said to be well-nigh over-banked, while in the suburbs of London the branches of two or three well-known banks compete for the account of the solvent trader.

The Private Banker.

Side by side with this extension of branch banking of the joint-stock banks may be noted the steady disappearance of the private banker. Old familiar names which for years, and, in some cases, for more than a century, had been household words in their respective localities, have passed away for ever. The causes for this change are

various. In some instances the old private bank, strong in its local associations and traditional history, had really been mismanaged. Under no obligation to publish accounts, it had made advances which it could not call in; in other words, its resources were hopelessly "locked up." In such cases it gladly sought absorption into a neighbouring joint-stock institution, which would, of course, insist on prompt repayment of all loans which were good and leave the "bad" ones at the risk of the old firm. The private banker sold himself because he was "weak" and knew it. In other instances the very reverse was the case. The old bank, with assets sufficiently liquid, in full touch with all local industries, respected and trusted everywhere, was a tempting morsel for the joint-stock institution to acquire. The directors of the latter, whose shares are quoted, probably, on the London Stock Exchange, assert, and that truthfully, that through that quotation they can give a marketable value to their capital which the capital of no private bank can hope to possess. They offer tempting terms to the private banker. He rises to the bait. He has worked hard and brought his bank to a high state of excellence, but can he be sure that his sons will exhibit the same sagacity and earnestness which he has displayed? He doubts it, and so sells his business for several years' purchase of the net profit, solacing himself and reassuring his customers by accepting for a time

a seat on the board of the purchasing bank. In this case the private banker sells himself because he is strong and solvent and gets a good price.

It is obviously too early at present to discuss the consequences which may result from this supersession of private bankers by branches of joint-stock institutions. Whether the latter, working, as they necessarily must, under rigid rules enjoined by the board at the head office, and not necessarily adapted to the needs of any particular district, can understand local requirements and provide for special needs as well as did the old private banker, who, at his best, watched every local industry and felt the pulse and knew the condition of every borrower, remains to be seen. The opinion of Lord Overstone, in his evidence before the Bank Charter Committee of 1840, that "joint-stock banks are deficient in everything requisite for the conduct of banking business except extended responsibility," has not been supported by experience, while the author of it did not hesitate to sell his own bank to a joint-stock institution. But for our present purpose it is sufficient to point out that this steady development of branch banking by all banks is an indication of, and indeed the outcome of, the abounding wealth of the country, which demanded greater banking facilities, and those facilities near at hand.

Growth of Deposits.

For what all banks seek by opening branches everywhere is to extend their resources. True, wherever they go they have to lend, if the security be good, but it is not the desire to *lend* which makes them cover the country with branches. They want *deposits*. Consider, now, what a bank deposit is. In every country, however poor, but especially in an old and wealthy country, everybody, whether landowner, manufacturer, merchant, or tradesman, keeps a certain part of his capital—called by the old economists his "stock"—in a fluid state, ready for immediate necessities. In a country where "credit" is sparse and locomotion difficult this free capital will be held in coined money or bank notes if they are available and carefully hoarded. In a country where credit is fully developed and access from hamlet or village to the neighbouring town ready and safe the free capital will form a deposit in the local bank. These deposits, gathered from a thousand sources, from a vast network of branches, agencies, and sub-agencies of banks covering the United Kingdom, are a most impressive example of the utilisation of capital—that is, of wealth applied to reproductive purposes. Such accumulations are only possible in a country where wealth is widely diffused and where social order and mutual confidence are widely diffused too. With every extension of

population new branch banks are established, fresh accounts are opened, more deposits are received, and another addition made to the available capital of the nation.

It is probable that the savings of the working classes do not, to their full extent, come within the purview of banking machinery. In crowded centres of population, either by means of penny banks or kindred institutions, the artisan may have an individual account, but his savings, so far as they are lodged with the Post Office or Trustee Savings Banks or with Benefit and Provident Societies or Clubs, do not swell the banker's balances. They pass into the hands of the National Debt Commissioners, and the working balance of the fund itself forms part of the public deposits at the Bank of England, and as a factor in the bank's resources is an important adjunct to the Fund for Loanable Capital.

The relation of a banker's deposit to the capital of the country is at once seen if it be remembered that in the vast majority of instances a deposit represents a margin of income beyond expenditure, of assets beyond liabilities, of property realised beyond debt actually due.

It is only of late years that the amount of these deposits has been accurately ascertained. When the bulk of banks were private firms and published no accounts the desired information could only be dimly estimated. The Returns of the *Economist*, published last May, show—

	Deposits.	Capital paid up
England and Wales	£702,000,000	£105,000,000
Scotland	107,000,000	17,000,000
Ireland	50,000,000	11,000,000
Total United Kingdom...	£859,000,000	£133,000,000

Now, in 1875 the Select Committee on Banks of Issue estimated the deposits at £350,000,000, so that we arrive at an increase in 27 years of 145 per cent. It should be added that this total of £859,000,000 takes no notice of the deposits in the hands of colonial and foreign banks having agencies in London, though, of course, some proportion of their resources is at times employed on the London market.

As to the machinery through which these deposits have been gathered, the last issue of the *Banking Almanac* shows that at the present time there are in the United Kingdom 6,592 bank offices, excluding 80 of foreign banks. In 1858 there were only 2,008, an increase in 45 years of 228 per cent. Moreover, between 1877 and 1891, 1,108 offices were opened in places where none had previously existed. During the same period the paid-up capital and reserves of the banks have grown by £50,000,000.

The Use of Cheques.

These innumerable bank accounts are operated upon by cheque. In other words, the depositor wishing to discharge a debt orders his banker,

in writing, to pay the creditor the specified sum. This order, called a cheque, is a negotiable instrument, and passing from hand to hand, may liquidate many debts. But of course it passes only on the credit of the drawer, and with the consent of the creditor. No one is compelled to take a cheque. Yet in this country, so well established is credit that the cheque is steadily supplanting other and older modes of defraying debts. Just as, from the time when banking became an admitted factor in the commercial life of the country, the bank note tended to supersede the use of coined money; just as the Bank of England note, endowed with the unique characteristic of "legal tender," ousted the ordinary bank note which had behind it only the credit of the issuer—a quality the worth of which could not be readily ascertained when banks did not publish balance-sheets—so now the cheque is, for home transactions, gradually taking the place of the Bank of England note.

A few figures will serve to substantiate this assertion. The average amount of notes in circulation at any one time in the United Kingdom, including not only Bank of England notes but the notes of Scotch and Irish banks and of the few remaining English country notes which still retain the right of issue, varies from 44 to 46 millions sterling. As long ago as 1856 the circulation reached from 36 to 39 millions, so that in 46 years the increase has been about 8 millions. Turn now to cheques.

At the present time the amount paid yearly through the Bankers' Clearing House amounts roughly to ten thousand millions of pounds. But all cheques do not pass through the London Clearing. There are eight provincial clearing houses, which manipulate large numbers of cheques. Again, cheques drawn on the Bank of England, or settled between accounts of the same bank, or various branches of one bank, or the various banks of one town, or paid over the counter, must be allowed for, as well as all Scotch and Irish cheques. Exact figures cannot be obtained, but in the opinion of those best qualified to judge the amount of cheques paid outside the London Clearing is not less than the amount passed through the House. Thus the cheques paid in the United Kingdom reach twenty thousand millions of pounds a year. Expressing this stupendous total as a daily average, and purposely eliminating all special days, such as Stock Exchange Settlements, &c., we find that ordinary business transactions to the extent of £52,000,000 are settled daily in the United Kingdom. In 1868 the corresponding total was £19,000,000. In a word, in 46 years the bank note circulation has increased 22·3 per cent.; in 34 years the cheque circulation has increased 173·4 per cent.

Accustomed to this universality of the cheque, and to the wide diffusion of solvency which it indicates, an English banker learns with surprise that nowadays in Paris authorised representatives are despatched weekly from the Bank of France and

other great French banks to collect in notes and coin the debts due to their respective establishments, chiefly in the form of discounted bills. And at the moment that these pages are passing through the press an instance comes to hand showing that in Germany at least the cheque and the credit behind it have not secured the confidence accorded to them in England. On September 3rd the Bank of England suddenly raised the rate of discount from 3 to 4 per cent. Nothing in the home trade, or in the state of the foreign exchanges suggested this precaution. It turned out that in Germany it is the custom for interest on mortgages to be paid on October 1st in notes or coin. The Imperial Bank, for reasons unknown to us, declined to provide the gold, and the other German banks had therefore to resort to the Bank of England, leaving the directors of the latter institution no alternative but to raise their rate.

Bills on London.

The cheque is of course an instrument mainly for home transactions. For these purposes it has not only reduced the circulation of bank notes, but has to a considerable extent superseded Inland Bills of Exchange. But for all the operations of international and foreign commerce or finance the bill of exchange is the chief expedient. In what we may call a primitive case of international trade, the foreign importer, wishing to discharge his debt to

his correspondent here, will remit to him a bill of exchange drawn on some trader in this country. That bill he obtains from a foreign exporter who, having sent goods here, draws upon the consignee for their value. Thus the exporter abroad is paid by the importer abroad, while the importer here liquidates the debt due to the home exporter.

Now, it is obvious that this transfer of debts cannot be carried out unless the "goodness" of the bill by which the transfer is accomplished is undoubted. In the case just quoted what the foreign buyer of the bill must be assured of is that the bill will be honoured when due, and that, moreover, there can be no mistake as to the currency in which payment will be made. The bill must represent undoubted credit and "good" money. But clearly the credit of an individual trader or importer, however good, cannot be so good as that of great banks and finance houses of world-wide reputation and admitted wealth. Hence international commerce tends more and more to be carried on by the intervention of these great houses. In other words, the importer will open for his correspondent a "credit" on a London finance house or bank, and under this credit the exporter will draw, thus getting a bill which he will be able to sell at the best possible price.

These bills on London constitute the chief agency by which international trade is carried on. Remember that a bill on London gives an indefeasible title

to the holder to obtain gold in London; and London is the chief market for gold in the world. A bill on Paris may, so far as the credit of the parties to it is concerned, be as well authenticated as a bill on London, but if the holder wants by means of it to obtain gold in Paris for export abroad, he finds that he will have to pay the Bank of France a premium for such gold. If, again, a merchant has a bill on Berlin, and wishes to convert it into gold for export, he finds himself confronted by difficulties. His proposal is not liked, and he is given to understand that his application, even if agreed to, must not be repeated. In London there are no such obstacles. The bill when paid passes to his credit. He draws bank notes, and each note is an irrefragable promise to pay so many ounces of gold of a given weight and fineness. In consequence every foreign banker holds bills on London as his favourite investment. They constitute, in fact, an international currency.

Returning to our accumulation of bank deposits, we note that this vast amount of capital collected throughout the length and breadth of the kingdom finds its way, after providing for local needs, into the hands of the London banks, and thus forms the great fund of loanable capital, the handling of which constitutes the business of the London Money Market.

THE BILL BROKER.

It must not be supposed that the operations of the Money Market are confined exclusively to the borrower who wants a loan or to the merchant who wants to discount a bill and the banker who is prepared to meet the want. Between the two, steps in the bill-broker. He is really a bill-merchant. It is his business to ascertain and have at his fingers' ends the standing and resources of every acceptor of a bill. He must be ready at a moment's notice to determine whether, out of hundreds of banks and commercial houses, this or that one is accepting more than is usual, and if so, whether there is special reason for the excess. Of good bills he cannot well have too many; of bad bills he willingly will have none. As a rule "inferior" paper will not be found in his hands, but the bulk of the bank and best trade bills reposes in his portfolio; and through his agency all first-rate bills find their way to the London Market.

The bill-broker buys his bill from the merchant and resells it, or borrows on it from the banker. Thus the latter is aided by the interposition between himself and the acceptor of the credit of the broker, while the merchant, taking advantage of the competition of the brokers, is enabled to sell his bill at the finest rate.

It is not too much to say that the gradual

development of the bill-broker in the London Market during the last half century is a convincing proof of the success with which that market has adapted itself to the necessities of a world-wide commerce. The bill-broker is an exclusively British institution. Abroad, the merchant must discount with the banker or not at all, and so loses the advantage which the competition of the London bill-brokers secures to the holder of a good bill.

Capital "Dumped" in London.

It will be readily understood that the resources of the London Market are replenished from many sources. Attracted by its advantages, the Scotch banks some years ago opened branches in London, and so "dumped down" supplies of "cheap capital" which they accumulated in Scotland by means of their notes, of which they had a monopoly. The London bankers grumbled because *they* could not issue notes in Scotland, but their complaint evoked no ready sympathy, and the Scotch banks "worked their wicked will." Later on German bankers, French bankers—the whole banking world in fact—opened branches in London so as to "dump down" their cheap capital on the much-enduring London Market.

And so this great market has grown, and grows! Based, broad and strong, upon national credit, it offers to the whole world its services. From all

it expects adequate security; to all its message is, "You may 'sojourn' but not 'abide.'" For the trader it discounts his bill, or his "prompt," or interposes a better credit than his own for his imports from abroad; for the promoter of a new company or the issuer of a new loan it encashes the "call," and in a score of ways helps on the new enterprise, the last "adventure." It is emphatically a "good" market; that is, one in which any one who has the proper security to offer can, except in extreme cases, always deal. But owing to the immense variety of influences operating upon it, it is a "sensitive" market. Every change in international relations, in the supply and demand of commodities, in the growth or decline of credit, in the movements of labour and capital, &c., will affect it. Like water in a closed tank, if a pailful is taken out and another is not put in the level of the whole is altered and the relations of the constituent drops affected. Thus the market value of loanable capital varies from day to day, and at times from hour to hour. In the ultimate resort the value of that capital, and indeed the stability of the market itself, depends upon what is in reality the pivot of the whole banking and financial system of the United Kingdom, viz., the adequacy of the reserve of gold of the Bank of England. It is impossible to do more than to refer to the subject in this paper, but we may be allowed to remark that in our judgment

the question whether that reserve is adequate to sustain the enormous superstructure of credit which has been erected on it, and which is daily increasing, is one of vital importance.

It is a point worthy of notice that the London Money Market is not localised in any one spot. Ask for the Corn Market, or the Wool Market, or the Insurance Market, or the Produce Market, or the Stock Market, and you can be at once directed to a particular building where the actual operations of purchase and sale are carried on, and where the brokers and others interested congregate daily. There is no reason in the nature of things why, similarly, there should not be a special building where the representatives of all the great banks and discount houses should meet, and where the intending borrower should ascertain the day's quotation for the capital he wishes to borrow. But this is not the case. The actual *locus in quo* of the London Money Market is the counting houses of the great banks and discount houses, with a final resort to the august precincts of the Discount Office of the Bank of England.

No Signs of Decay.

It is obvious that the daily manipulation of this fund of loanable capital brings the practical banker and bill-broker into contact with almost every development of commercial activity. It is a necessity of his position that he should be able

to forecast the probable effects of all great events, such as political or social changes as well as the smaller trade variations which occur within his particular district. He will quickly come to make allowance for the exaggeration with which nearly all men speak when their interests appear to be threatened. He will be keenly alive to the fact that in so complex a piece of machinery as modern international commerce a perfect equipoise between supply and demand can hardly be maintained for any length of time. The phenomena of "glut" in a particular market is at times inevitable; and there is no difference of principle between the "dumping down" on the Home Market, at less than cost price, of surplus pig iron manufactured abroad and the time-honoured action of the retail draper who, having misinterpreted the "demand" or lagged behind the fashion, marks his goods at an "appalling sacrifice." In all such cases the complaint of the producer whose goods are for the moment undersold is sure to be heard; the fortunate purchaser of the cheap commodity pockets his profit and maintains a complacent silence. This and a score of other phenomena which disturb the manufacturer or producer are incidents inseparable from the conduct of business, and no other conclusion can be drawn from them than that he is the wisest trader who interprets demand most accurately. Again, our practical banker, accustomed to observe

the ebb and flow of trade and judge of each application for advances on its merits, will learn to distrust all general statements of impending national calamity. He is told, for instance, that for some time past the nation has been living on its capital. Knowing that the "nation" in its corporate capacity does not enter into commerce, but that, at any given time, certain merchants and manufacturers are buying and others selling, he naturally inquires for the particular persons whose balance-sheets have for years shown a steady excess of liabilities or waste of assets. He may find here and there instances of bad or unprofitable trading, but nothing to justify the assertion of general decay or continuous diminution of capital.

When, on the other hand, he turns to the indications of national progress as embodied in the official returns, he finds that the returns of the Bankers' Clearing House, of the Savings Banks and Friendly Societies, of shipping, of pauperism, and above all of the yield of the income tax, furnish indubitable proofs of the steady growth of capital within the nation.

Again, our practical banker or broker will not be particularly disturbed about the alleged "ominous excess of imports." Accustomed to observe, in the special statistics which he can check, how difficult is their interpretation, how frequently the obvious is the untrue, he will probably apply a simpler test

to the solution of the problem. He knows that such a stupendous indebtedness, if it really existed, would turn against us the exchange of many centres. But the normal variations of the Exchange Market are orderly and periodic, the abnormal variations capable of immediate explanation. And so our practical banker sleeps in peace, confident that either the consignment of the merchant or the operations of the arbitrageur will liquidate any real debt, with but an occasional resort to the Bullion Office of the Bank of England. In this and in other instances where the operations of commerce pass beyond the counting-house to become the subject of letters to the editor or of magazine articles, he will be less apprehensive about the outcome of the particular operation referred to than about the use that may be made of it by those "who have their own axes to grind."

Free from Official Interference.

What, now, is the connection between the development of banking and finance in the country and Free Trade? It may be admitted that the relation between them may not, at first sight, be so intimately discerned as in the case of certain great industries whose growth is obviously associated with the remission of taxes which hampered production. But none the less if the genesis of the Fund of Loanable Capital be what we have indicated,

then every agency which has stimulated production, everything that has made production profitable, has resulted in the accumulation of capital, and the loanable capital which bankers and financiers wield is but a portion of the general accumulation which, as we have explained, is kept free and immediately available. It follows, no doubt, that an ideal commerce would be free from all fiscal restraints whatever. Every imposition of a duty, every Custom House or Excise regulation, every stamp on a bond or deed or cheque, however inevitable for purposes of revenue each impost may be, tends, as far as it goes, to impede business, and so to hamper the exchange of commodities and the profitable employment of capital. The truth of this principle is attested by the continuous policy of the British Government, which, while demanding a toll of ten shillings per cent. on all foreign bonds issued in this country, has never thought of imposing any tax on the transfer of its own debt. Indeed, the growing tendency of all authorities—national, municipal, or otherwise—to bear themselves the burden of fiscal imposts and issue their securities "free of stamp duties" is an unconscious tribute to the deep-seated desire for a market unaffected by Government intervention. The late Mr. Bagehot was proud of Great Britain because it was the only country where the "grocer was not afraid of the Exciseman": so our practical banker will be proud of his market in propor-

tion as the daily current of the capital which constitutes it is exempted from the "stamps" of Somerset House and the tax of the "tariff reformer."

On the other hand, he will not attribute our existing prosperity to Free Trade only. So far as that prosperity has affected *his* industry —so far as it has meant larger deposits and discounts, and more extended credit generally —he would not fail to recognise the share which other agencies have had in promoting it, notably social order and the maintenance of the gold standard. But nevertheless he will feel assured that the more rapid accumulation and wider diffusion of capital was coincident with the advent of Free Trade, and distinctly traceable to it. The repeal of the Navigation Laws, resulting in the gigantic growth of our shipping, and making us the carriers for three-fourths of the world's traffic; the policy of free imports giving us an unmistakable advantage as regards cheap and efficient productions in the universal competition; in other words, free ports and free markets—these are the factors by which the accumulation of capital has been mainly accomplished.

A Great Creditor Nation.

Surely, though slowly, we have become the great creditor nation. We have invested enormous sums in our Colonies and in foreign countries, and so receive

a yearly-increasing tribute in money or money's worth. In some instances, as, *e.g.*, in Argentina, nearly the whole of the development of the country has been due to British capital; and our capital has been invested prudently only so far as it has been invested on the principle which is the essence of Free Trade, that of ascertaining what each country is best fitted to produce, and then aiding in its production or transportation.

Moreover, in our dealings, whether by way of investment or trade, we have hitherto escaped the tyranny of the sophism of retaliation. We have instinctively felt that the adoption of this policy would in the case of raw materials result in our purchases being made at a dearer rate and of an inferior quality; in the case of manufacturers it is highly improbable that goods which require protection in the home market would successfully compete with similar goods in a foreign market. What, then, the London Money Market chiefly desiderates is unfettered production and the steady accumulation and diffusion of capital which results therefrom. It wants abundance of bills, so long as each bill represents commodities or other real considerations. It realises that so long as the United Kingdom is a free market for all sellers the capital with which it deals will be profitably employed. But to the extent to which free imports are stopped the cost of production in this country will be enhanced and the power of the country to sell her

products in the face of hostile tariffs will be proportionately impaired. Again, to the extent to which we decline to admit the goods of foreign countries we weaken their productive power, and so render it more difficult for them to pay the interest due to us in respect of our enormous investments of capital abroad. It is obviously illogical and foolish to continue our lavish outlay of capital abroad and then impede by fiscal restrictions the influx of goods by which our interest is paid. The tendency of all such restraints will be in the ultimate resort to restrict the growth of the Loanable Capital Fund. But there are other and worse consequences than these.

The Tyranny of American Trusts.

One of the most dangerous elements in the industrial and financial position of the United States at the present time is the influence exerted by gigantic Trusts, which are practically monopolies of the most aggressive character. These Trusts are lowering the tone of American commercial life to an extent which we in England can hardly believe. If not the logical outcome of Protection, they certainly derive from it their chief profit. The aim of the "Boss" is to capture the tariff, to manipulate it for his own purposes. With this view he disciplines his retinue of voters, Congressmen, and Senators. But, further, it is essential that he should have a preponderating influence over his bankers,

so that at his bidding they shall carry his "underwriting" and manage his "syndicates." He cares not if the bank, in obeying his behests, finds itself hopelessly "locked up" with its reputation impaired. Dealing with this subject, a recent writer remarks: "In England the banker looks after the trader, in the States the trader finds it necessary to look after the banker."

Now, from these baneful influences the British banker has hitherto been free. In the handling of his resources he has been loyal to the best traditions of British banking. He has ever recognised that "he only is a banker who knows the difference between a mortgage and a bill of exchange." Hence the ready convertibility of his assets and the inconsiderable amount of his "bad debts." He realises that sound banking has been associated with Free Trade, and he deprecates the introduction of any system which readily lends itself to unscrupulous trading and unsafe banking.

But further. Hitherto the British manufacturer and merchant, though exposed to those vicissitudes and changes which are inevitable in a world-wide commerce, though worried often enough with the tariff of other countries, have been exempted from the additional trouble incidental to an elaborate home tariff. And this home tariff must mean commercial unrest and uncertainty. The introduction of preferential or protective tariffs in a country where duties have been imposed for revenue

purposes only will be like the letting out of water. Every trade in turn—and never were trades so organised as now—will clamour for its share of fiscal protection. Each claim will be criticised by eager competitors. Home interests will conflict with colonial interests. The interests of one colony will not be identical with those of another. Revision will succeed revision, each one leaving its own trace of jealousy and heartburning both at home and abroad. Hitherto the foreigner, chagrined at our constant acquisition of new countries, has been silenced by the consideration that throughout these areas he was as free to trade as we ourselves. But with the disappearance of the "open door" there will be nothing to mitigate his jealousy. Moreover the phenomenon observable in all protectionist countries will be repeated here—that all tariffs tend to increase. And why should they not? Why should a manufacturer trouble about new inventions and more efficient plant when his relative disadvantage can be compensated for by levying increased duties on his competing foreign rival. If Free Trade necessarily means alertness, capacity, and enterprise, it follows that Protection means the reverse.

Now, the arena of all these fiscal aspirations and conflicts must be the floor of the House of Commons. In other words, commerce becomes indissolubly associated with politics—a union injurious to both. Each interest or each group of

interests will have its journals, its constituencies, and its members of Parliament pledged to advocate its cause, and the lobbying of Washington will be reproduced at St. Stephen's. A committee or conference of Colonial and home representatives, however selected, will have to consider each fiscal proposal, and to recommend it or not for adoption into the Budget of the Chancellor of the Exchequer. Such a condition of affairs cannot but hamper business, disturb credit, embarrass enterprise, restrict the scope and undermine the supremacy of the London Money Market, and so tend to transfer its business to other centres.

SHIPPING LINERS

By Maurice Llewelyn Davies

(*Of Messrs. Alfred Holt & Co.*)

THE immense and steady growth of our merchant navy is one of those phenomena which by their very familiarity cease to be remarked and to make their due impression. It has come to be regarded as a matter of course that our tonnage should be vastly increased year by year and that fresh regular lines of communication should be constantly established. Prosperity in a trade, like health in the human system, does not draw attention to itself; those engaged in it have no motive for making it known that they are doing well, and some motives to the contrary. On the other hand, the smallest unfavourable fluctuation leads to an outcry, and usually to a demand for some quack remedy.

That no real check has to be recorded up to the present time is sufficiently clear from the latest

statistics, issued by the Board of Trade in August, 1903. These show the total tonnage of our mercantile marine to be still steadily increasing, and the following table, of the tonnage of British and foreign merchant vessels (sailing and steam) which have entered and cleared in the foreign trade at ports in the United Kingdom, is typical of the scale upon which expansion has taken place :—

	British.	Foreign.	British Percentage of total.
1840	6,490,485	2,949,182	68·8
1850	9,442,544	5,062,520	65·1
1860	13,914,923	10,774,369	56·4
1870	25,072,180	11,568,002	68·4
1880	41,348,984	17,387,079	70·4
1890	53,973,112	20,310,757	72·7
1900	62,710,836	35,812,857	63·7
1902	64,902,907	34,969,812	65·0

Nor is there any substantial foundation for the fear that foreign maritime enterprise is overtaking us. In this connection the following extract from the Report of the House of Commons Select Committee on Steamship Subsidies (1902) should be weighed :—

"The Board of Trade belief is, stated with the utmost confidence, that British shipping maintains a flourishing position and creditably holds its own in most places as compared with foreign shipping, though it is unquestionably true that foreign tonnage increases in proportion more rapidly because it starts at a lower figure. It is easier to increase

from 1 to 2 than from 100 to 200. Between 1890 and 1902 the world's gross tonnage increased from 13,000,000 to 26,000,000, but while in that period the British proportion of it has sunk from 63·4 to 52·8 per cent., British steam tonnage has in fact increased in amount from 8¼ millions to 13½ millions. The German proportion has risen from 7·2 to 10·2 per cent., but the actual increase is only from 928,000 to 2,600,000 tons. Thus, although our proportion has sunk and the German proportion has risen, it will be noticed that in amount our steam tonnage has increased by 5,400,000 tons, while that of Germany has only increased by 1,700,000 tons; in other words, that for every ton which Germany has added, we have added rather more than three."

Liners and Tramps.

It should be noted that the above figures, and such others as are available, relate to British shipping as a whole, or discriminate only between steamers and sailing ships or between ships of different sizes. The scheme of this book, however, provides for the treatment of shipping under two heads, in accordance with the rough and familiar distinction between "liners" and "tramps"; that is to say, vessels which sail with regularity more or less complete in a single trade and vessels which seek employment about the world wherever freights tempt them. The latter class is dealt with in a separate essay, while the former will be specially

referred to here. The distinction, however, though convenient, is by no means a scientific one. There are many vessels on the border-line; trades which have required only occasional "tramp" tonnage are constantly growing to the point of needing a regular service. No figures exist which discriminate between "tramps" and "liners," but it may probably be assumed that the general growth registered applies fairly equally to both sections.

Sailing ships, it may be observed in passing, might be divided into the same two classes, though the names are in practical usage confined to steamers; but the end of sailing ships, though not so rapid, is as certain as that of stage coaches, and though we may regret the disappearance of the fine sailing vessels of former times and admit their value as training schools for seamen, it would be a retrograde step to copy the French policy of attempting by bounties or otherwise to retard the process of their extinction.

Steamship "liners" vary considerably in size and type, from the gigantic passenger steamers, often carrying hardly any cargo, and naturally attracting a very disproportionate share of such attention as the general public gives to shipping, through boats which combine in different proportions accommodation for cargo and passengers, to purely cargo vessels which run with regularity in many trades. All are familiar with the great Atlantic, Eastern, and Australian lines; but a glance at the advertisement

columns of a shipping paper will show how many other trades throughout the world are served largely or exclusively by British "liner" tonnage. Two points should be noticed. First, that among the routes occupied by British lines are not a few, neither terminus of which is in the British Empire, an instance being the important trade between the United States and South America. Secondly, that a certain proportion of lines run under foreign flags are really British owned; the motive being usually the hope of securing some advantage or preference which a patriotic impulse leads foreign Governments or merchants to bestow upon vessels even nominally national.

Shipping and Free Trade.

That British shipping has grown enormously since the Free Trade era is undeniable, the only point that can be disputed being how far *post hoc* is also *propter hoc*. So far as regularly trading vessels, or "liners," are concerned, nothing even remotely comparable to the present state of affairs existed before the institution of the Free Trade system. There were fine sailing ships in regular employment, such as the famous passenger vessels from London to Bombay, Madras and Calcutta, and the China tea clippers; and there were a few steamers on the Atlantic. It is often forgotten that the United States then held the predominance in the Atlantic shipping trade. This was lost, no

doubt, principally through the change which led to the construction of vessels of iron or steel instead of wood, and through the troubles of the Civil War; but it may be remarked that the failure of the Americans up to the present time, during peace and since their steel industry was developed, even to attempt to recover their share of the Atlantic trade is to a large extent plainly traceable to their protective fiscal policy.

Similarly our prosperity is undoubtedly to a greater or less extent the result of our Free Trade system, but it is a question upon which no dogmatic statement can be made how far it is due to this and how far to other causes, such as the application of steam, the use of steel and iron, the opening of the Suez Canal and other physical improvements, and the general industrial advance. In this chapter it is proposed to indicate certain points in the Free Trade system which certainly have helped shipping enterprise; readers may judge for themselves whether at all events a large share in our great success may not be fairly attributed to the enlightened fiscal policy pursued during the last fifty or sixty years.

The Dangers of Retaliation.

The features in the Free Trade system which have proved beneficial to shipping may conveniently be stated under four heads.

1. First and most important is the effect which

the general policy of free imports has had in vastly swelling the volume of the country's oversea trade. The removal of protective duties has allowed the unrestricted inrush of foreign products, and these have been paid for by corresponding exports. The mercantile marine has thus doubly benefited. Goods brought to, or exported from, British ports have naturally tended to be carried in British vessels; the merchant navy being thus created, the enterprise of shipowners looks further afield and the phenomenon already noted follows, of the entire or partial capture of trades between places neither of which is in British territory.

That any tariff wall, or restriction of imports, must, so far as it is effective, injure our carrying trade by reducing the quantity of "inward" cargo available, is obvious. It may be well to point out that an export duty such as that now levied upon coal has the same effect. It tends to handicap British coal in its competition for foreign markets, and thus to reduce the quantity exported and the freights paid to shipping. This particular export duty also penalises steam shipping in another manner; for though coal taken at home ports as "bunkers" is exempted, the price of the British coal bought at foreign ports for steamers' consumption is undoubtedly raised by the amount of the duty.

The question whether a purely retaliatory or "Fair Trade" policy would be likely in any way to reduce the tariff barriers raised against us by

foreign countries is rather beyond the scope of this paper, but it should be pointed out that this country is in a singularly weak position for carrying on commercial warfare, not merely because our imports are chiefly food and raw materials—which we cannot tax without manifest danger—but still more because our shipping would evidently be the first object of attack. In this way, above all, an opponent might inflict a deadly and perhaps irreparable blow at a vital organ of our national life. All parties interested in shipping should be foremost in striving to maintain the most-favoured-nation system, so that our ships may be secured against differential dues in foreign ports.

Cheap Shipbuilding.

2. Secondly, it is quite impossible to overestimate the advantage which British shipowners have derived from the cheapness of vessels, due to the unrestricted importation, and consequent low price, of materials. Of these materials, iron and steel are the most important, but there are innumerable other products that go to the building of a ship, many of which would be described as "manufactured goods" rather than "raw materials"; and cheap food for workmen really comes under the same category. The result has been a vast extension of shipbuilding, to which active shipowning has been a natural concomitant.

The tonnage of ships (sailing and steam) built in

the United Kingdom (excluding the Royal Navy), has been as follows :—

Four Years' Average.			Tons.
1859–62	...	...	227,000
1869–72	...	...	412,000
1879–82	...	...	568,000
1889–92	...	...	815,000
1899–1902	...	...	954,000

How effectually our system results in the cheapening of vessels may be seen from the following facts. An English steamship company in 1899 invited tenders from four first-class British shipbuilding firms and one German firm of similar standing for a large cargo steamer, to be constructed according to a detailed specification which was supplied to all the builders alike. The German tender was £136,000 ; the British tenders varied between £123,000 and £111,000. Inquiries made with a similar object in the United States in 1901 showed that an order could not be placed there unless at about 50 per cent. above British prices.

3. Shipowners who remember the conditions under which business was carried on before the days of Free Trade speak with feeling of the enormous relief which attended the disappearance of the formalities and delays inevitable under a tariff. Those who have most business experience will be the least inclined to underrate the substantial advantages which accrue to trade in general and to shipping in particular from the simplification which

is the result of a short tariff list. The trouble, delay, and expense, when many classes of goods have to undergo the process of "bonding," constitute an impediment to trade of real seriousness. Nor must it be overlooked that a tariff on imports would at once lead to a demand for a system of drawbacks on exports in the manufacture of which these taxed imports are used.

The Curse of Red Tape.

We have already had some taste of these difficulties in connection with the Sugar Duty and the (now happily abolished) Corn Duty of 1902. The trade in sugar and corn has been swathed about in endless coils of red tape, and "drawbacks" have had to be claimed on the multifarious products into which sugar and cereals are made up. But it should be noticed in particular that any preferential or discriminating tariff would involve the resurrection of the system of "Certificates of Origin"—a system which used to lead, and would again lead, not merely to infinite inconveniences, disputes and delays, but to widespread evasion and fraud.

An experienced shipowner who remembers the state of affairs in the era before Free Trade gives (in a letter to the writer) the following vivid picture of its disadvantages: "On half the things exported drawbacks had to be claimed from the Custom House as a consequence of our then 'excise' laws, which is merely another name for the duty on

manufactured articles. The waste of time and money necessary to the system would now be thought incredible, leading often to bribery of officials as the lesser evil. No article on which drawback was wanted could be put on board the vessel until it had been weighed, measured, opened, tested, or in some way inspected and certified by a Custom House officer. The first question was, where to find him. A man whose presence and signature is necessary to a transaction does not usually trouble himself much about it, and if it happened (as it not unfrequently did happen) that two people wanted him to come to two vessels lying in docks a quarter of a mile apart, and the time was 10 minutes to 3 p.m. (when his duties ceased), a 'refresher' of some sort by one or other, if not by both, of the applicants for his presence and signature was helpful: the signature would satisfy one, and the presence the other, applicant. And when all was done at the docks there was still the needful work to be done in that horrid 'Long Room' at the Custom House, where the principal article dispensed by the swarm of officials was a limitless supply of insolence from Jacks-in-office. All Custom House work had to be squeezed in between 8 a.m. and 3 p.m. The whole cost of this dreadful system had to be paid for by some one. From all duties on manufactured articles, from Custom House Officials, from drawbacks, signatures, and stamped papers, good Lord, deliver us."

4. The fourth benefit which the adoption of Free Trade principles has conferred upon the shipping industry is perhaps in the nature of a blessing in disguise. It consists in the discontinuance of well-meant governmental attempts to stimulate artificially the growth and prosperity of the trade. The Navigation Laws, which had for a long period attempted to restrict certain trades, principally the coasting and colonial, to British vessels, while at the same time compelling owners to carry a certain proportion of British subjects in each crew, were repealed in 1849 as a natural consequence of the Free Trade policy which was then being put into force. These laws were felt to be a part of the system of restriction and monopoly from which the national commerce was being freed with strikingly beneficial results; and in particular the restriction of colonial cargo to British ships constituted a real grievance against which the Colonies had long protested. Shipowners, though welcoming the removal of the troublesome rule as to the composition of crews, were somewhat alarmed at the withdrawal of their monopoly, and especially at the prospect of the admittance of foreign ships into the coasting trade; but the measure was rapidly justified by its results, and not more than a minute percentage of the coasting trade has ever fallen to foreign vessels.

Subsidies and Bounties.

Another natural corollary of the Free Trade

policy is, or should be, the abolition of bounties and subsidies to shipping. How far this has really been carried out in this country, even since the Free Trade era, is somewhat doubtful. Payments for carrying mails and retaining fees for naval purposes are commonly described as subsidies; and undoubtedly, if strictly necessary and aimed at these purposes solely, they cannot be regarded as breaches of Free Trade principles. There is, however, a constant tendency for a protective element to slip in; the encouragement of trade is aimed at, or the maintenance of a great and imposing passenger line, an object which is easily veiled in some vague and high-sounding phrase.[1] Any sum paid beyond the strict competitive price at which the necessary postal or naval services can be obtained undoubtedly constitutes naked Protection. A very glaring recent instance is the huge financial subvention granted in 1903 to the Cunard Line, as a result of a foolish scare consequent upon the sale of certain steamers at high prices to an American

[1] "I do not think you can say that we pay only for postal services pure and simple. *Q.* For what other services is it paid? *A.* There is the advantage to the Government and the Empire of having an absolutely fixed and regular service; a service upon which the Government as a body, and the individuals composing the whole community, can rely for moving themselves and their goods and chattels at any fixed moment."—Evidence of Mr. Buxton Forman, Controller of the Packet Services in the General Post Office, before the House of Commons Select Committee on Steamship Subsidies, 1901.

syndicate. This is complicated, as usual, with naval considerations of dubious validity, but it is not denied that the sum paid must in large part be regarded as a trade subsidy, in other words a direct contribution by the taxpayers to the funds of a particular steamship company.

An Encouragement to Inefficiency.

Legislation in the direction of the re-enactment of the Navigation Laws, though occasionally suggested, is not really desired by the great body of British shipowners, and the Select Committee of the House of Commons on Steamship Subsidies, in their Report (1902), truly stated that "Most shipowners, generally speaking, are opposed to subsidies." It is worth while briefly summarising the reasons for the opinion that a protective policy, aiming at helping the industry by either method, is really objectionable and impracticable. In the first place, it is instinctively felt by shipowners that Protection in whatever shape would be accompanied by onerous conditions; just as the Navigation Laws involved restrictions upon the nationality of the crews, so now attempts to exclude Asiatic seamen, or to enforce the carrying of apprentices, perhaps even to regulate rates of freight, would be probable features of protective legislation, and would certainly not be alien to its spirit. Again, business enterprise, as in other trades, would be weakened by the acceptance of assistance so obviously eleemosynary;

British shipowners have no need of a crutch to walk with. How little a liberal system of bounties tends to brace and strengthen an industry is conspicuous from the present state of shipping in France. Subsidies, as experience shows, tend to check the advance of mechanical improvement and experiment.[1] It is moreover impossible to subsidise the whole of British shipping, and at the same time grossly unfair to select particular lines for help, especially wealthy passenger lines. Any such measure only tends to make independent com-

[1] "The system began about 1840, and some of the subsidies granted put an end to independent lines just coming into existence. Subsidies had thrown back the use of the screw propeller ten or fifteen years. The *Great Britain* was built in 1840, and though she was not perfect, she afforded a very fair trial of the screw. After one or two more trials it would almost have attained its present perfection; but simultaneously the system of subsidies was started—and it was the natural desire of all the holders of subsidies to pursue the safe, and avoid experiments—and hence they clung to the paddle wheel, knowing exactly what it might be relied on to do, and that though an imperfect wasteful instrument, its performance was accurately calculable. Subsidised lines in those days of few steamers naturally formed public opinion, and the result was that between 1840 and 1855 any one who used a screw propeller in a vessel of importance was considered a hare-brained experimentalist, not to be trusted. Subsidies could also be shown to have delayed the use of iron vessels many years. People would not have the boldness to differ from the great steamboat owners, who themselves would try nothing new, and hence fleets worth millions sterling were built, their designers and many of their owners well knowing that the vessels were not of the best description."—Mr. Alfred Holt, "Review of the Progress of Steam Shipping" (Proceedings of the Institution of Civil Engineers, vol. li, session 1877–78.)

petition in the branch of trade to which it is applied almost impossible, or at all events to handicap it severely. Finally, it must not be forgotten that subsidies and bounties, if given here, tend to provoke imitative or retaliatory measures abroad. It would not be difficult to show that this has actually been their result in the past, and if the United States Subsidy Bill, which had apparently been abandoned, is revived, its supporters will undoubtedly be able to use the Cunard subsidy as their strongest argument. It is earnestly to be hoped in the interests of the industry as well as of the nation that Great Britain, among the other forms of Protection, will unhesitatingly reject any policy, veiled or open, involving the endowment of the shipping trade at the expense of the community.

TRAMP SHIPPING

By Walter Runciman, Jun., M.P.

(*Of Messrs. Walter Runciman & Co. of Newcastle and London, Owners and Managers of the "Moor" Steamers*)

THE amazing growth of British shipping during the past forty or fifty years is due not entirely to physical conditions. Our Free Trade policy removed the obstacles to rapid growth, tended to develop efficiency, and has encouraged the most abundant exchange of commodities. Every word of that statement will be accepted by any one who knows and understands the recent history and conditions of our shipping trade. During the period from 1880 to 1901, when British tonnage went up over 3,000,000 tons, the tonnage of the merchant navy of the total German Empire grew by only 900,000 net tons, namely, from 1,181,525 in 1880, to 2,093,033 in 1901.

The following table shows the advance since 1850, and compares our figures with those for the oversea gross tonnage of the Protectionist United States of America.

	Under Free Trade. British Net Tonnage.	Under Protection. U.S. Oversea Gross Tonnage.
1850	3,565,133 ...	1,585,711
1860	4,658,687 ...	2,546,237
1870	5,690,789 ...	1,516,800
1880	6,574,513 ...	1,532,810
1890	7,978,538 ...	946,695
1900	9,304,108 ...	—
1901	9,608,420 ...	889,129

If you stand on the Rock of Gibraltar and count the steamers passing East and West, six out of ten will be British. Watch the traffic up and down the Bosphorus, and for every three foreign steamers you will see seven British. Look up the records of the Suez Canal, and you will find Great Britain accounts for more of the total Canal traffic than do Germany, France, Russia, and all the rest of the world put together. Lloyd's Register states that of the oversea tonnage of all the world, sail and steam, the British flag is flown by nearly one half, and in steamers alone by over one half. The British *gross* steam tonnage last year amounted to over 13,650,000 tons; all the other countries of the world combined could muster only 12,200,000. This volume of tonnage is said to be no indication of the prosperity of the British merchant shipping, for foreign competition is more assiduous than ever, and from the point of view of individual profits, home competition has recently proved no less damaging.

How are colonial preferential tariffs to diminish

the number of either British or foreign competitors? Or how far can preferential tariffs increase the volume of the world's trade? Will the proposed prohibition or taxation of steel, &c., produced by German or American manufacturers help or hamper British shipping? Will British shipping run any risks in the course of a long or short bout of tariff retaliation? These questions are regarded by the Tramp from a point of view which is not as restricted as that of the Liner. The Liners have more or less secured themselves in the trades which they cultivate. Some of them find the basis of their business in mail contracts, for which the Post Offices pay regular remuneration. Some depend on mercantile manipulation and combination as well as on cheap carriage for their security. They all work to some extent in what are known as Conferences (the vulgar have sometimes called them Rings), and thus diminish competition, whether British or foreign. They steam along regular routes, and their attention is concentrated mainly on the trade confined to these routes. Thus a Liner trading exclusively to Canada will tell you that a preference given to Canadian grain in England and to English goods in Canada would, by increasing the Canadian-English traffic, be undoubtedly beneficial. The extra cost of his new steamers caused by the protection of the British iron-masters could be ignored by him if his trade were sufficiently enhanced; nor could retaliation reach him on his

route. And with slight modifications these remarks are true of the West Indian, South African, and Australasian lines. In his narrowest capacity it is no business of the manager or owner of these lines to inquire how far his prosperity thus encouraged would mean disaster for other people. The nation, however, must remember that what the colonial lines would gain would be lost by the vessels depending for employment on foreign cargoes. Until the position of India is defined, we cannot tell the effect of Mr. Chamberlain's proposals on the volume of the Eastern trade. But the lines whose ports of departure, ports of call and destinations are foreign, could extract no benefit whatever from a colonial preference; an artificial rise in the price of steel, &c., would handicap them; and retaliation would place them most in danger of attack. Yet even their position is less risky than that of the Tramp, for they have by combination and by monopoly of port facilities secured themselves to some extent from outside attack, and they refrain from invading a foreign competitors' business whenever by such abstinence they can persuade the foreigner to leave them alone.

The Unprotected Tramp.

The Tramp, on the other hand, goes everywhere, competes for everything against everybody, cuts into any trade—British, foreign, or colonial—whenever he can see a profit: and he is similarly subject to attacks with no means of defence except his own

efficiency. Such free competition on the whole brings to the most capable shipowner, who works the best and cheapest vessels, his just reward in profits and uninterrupted employment. In this incessant Tramp contest we are supreme: so supreme indeed, that in carriage by Tramps we do not only our own work, but we have also captured, unaided by Government subsidy or privilege, the business of nearly the whole world, colonial as well as foreign. Few people realise that the British Mercantile Marine is largely composed of Tramps. Let any one go to Newcastle and Shields, to Sunderland, Hartlepool, Cardiff, or Middlesborough, and he will find swarms of firms whose fleets are composed of Tramps alone. They carry nothing but cargo from year to year, very largely coals outwards from the United Kingdom, and grain, timber, cotton, and other bulk cargoes homewards. Even in great Liner centres like Liverpool, London, and the Clyde, Tramps may be counted by the hundreds; they include all kinds of vessels, from the little packet which plies on the coast to the six, eight, or ten thousand tonners which go further afield. And their interests are not restricted merely to the ports of registry, for of the £120,000,000 or thereabouts of capital invested in these innumerable vessels, an immense amount of it is owned by shareholders in every part of the United Kingdom. The Liners are so beautifully advertised in railway stations, hotels, and shops, and obtain such ex-

tensive attention from the newspapers, that the man in the inland street imagines all British shipping is to be found in the great Lines. Far from that, the Liners number roughly 1,300 vessels, while the Tramps approximate to some 7,000 steamers and 7,000 sailing ships. Herein lies our most marked supremacy, which has been won by us in open competition. The growth of this vast mercantile power synchronises with the growth of our Free Trade policy. The experience of the past fifty years has proved that no protective country has been able to create and develop a strong Tramp fleet. France has failed in spite of expensive efforts; Germany's expansion has been peculiarly in Lines; and the American Tramp has almost disappeared.

Cheap Shipbuilding Essential.

The first essential condition to success in Tramp business is cheap and good shipbuilding. Cheap repairing ranks next in importance. Economy of construction and economical management are the deciding factors in the history of shipping of all descriptions, but especially so of Tramps. One need not wonder at the alarm with which shipping traders look on the agitation in favour of Protection for the British iron-masters. If a tariff wall is to be raised round the country, the Steel Ring now incipient would be uncurbed by outside competition, with the natural consequence of a rise in the cost of shipbuilders' material and a further stimulus

to higher prices for new vessels, which form the raw material of shipping. Of course prices fluctuate from natural trade causes, but these inflations would be constant whether in good or bad times. The shipowner would have to pay the difference, with the result that to recoup himself freights must be advanced, whereupon other maritime Powers might capture some of the business which we by superior economy now retain. This is what has happened in the United States, where with all the advantages of personal smartness and clever machinery, steamers cost 30 per cent. more to build than in the United Kingdom. That 30 per cent. has killed American Tramp shipping. But even if the new Fiscal proposals are to be restricted to the taxation of food, Mr. Chamberlain assures the artisan that higher wages are to follow. *If* higher wages follow, it is clear that the proposals forecast an addition to the shipbuilder's labour bill. Roughly 45 per cent. of the price of new vessels goes in cost of shipbuilder's and engineer's labour, 45 per cent. in cost of steel, &c., and 10 per cent. in shipbuilder's profits. Similarly repairing would become more expensive, and in these two important items alone, even if in no others, economical management would be dangerously handicapped.

How Tariffs Hamper Trade.

Nor can the Tramp owner contemplate without dismay the very least shrinkage in international trade.

He wishes to see international trade encouraged in every legitimate way. Men with experience of the world's commerce know how much tariffs hamper trade, not in theory only, but in actual practice, and the effect is reflex. The carriage of coal in particular from the United Kingdom is dependent on abundant imports back again into this country or into other near countries. For instance, were Russian grain unwelcome in our ports, hundreds of vessels would be deprived of homeward cargo from the Mediterranean, and the outward coal voyages of our vessels would become possible only at greatly increased outward freights. The consequent rise in outward freights would mean that English coal could reach Italian, French, and Spanish ports only if it could secure a greatly enhanced price; whereupon cheap American coal, which has long waited for its opportunity, might secure a permanent footing in our Mediterranean markets. Moreover, the diversion of homeward cargoes would thus add enormously to the cost of coal delivered at the great coaling stations of Port Said, Malta, Algiers, and Gibraltar; and the price of bunkers taken by British steamers would add another burden to the expenses of the shipowner. Or again, consider how easily Welsh coal might be displaced in the Argentine by Virginian coal, the quality and cheapness of which are aided by the fact that the distance to the Argentine from the States is less than from Wales. These advantages of the American coal exporter are

neutralised at present by the fact that steamers cannot afford to go out in such numbers from the States at the same low freight which is sufficient to remunerate them for carriage from England, for vessels which carry coal from, say, Norfolk (Virginia) to Buenos Ayres cannot get a return cargo to an equivalent extent homeward to the United States owing to the States tariff wall against foreign imports. In fact, instances of the dangers of a diversion of trade routes are innumerable; and the shipping trade is at present passing through so severe a depression that the least dislocation or diminution of trade will do infinite harm.

The Canadian trade provides two more illustrations. First, the transference of the Russian grain trade to Canada would mean that many vessels now being used in the Black Sea and Baltic would be unable to secure a footing in the St. Lawrence. Larger boats of a more suitable type would be required for those waters. Second, the average shipowner does not clamour for Canadian voyages, for navigation in the St. Lawrence is dangerous, and underwriters want 2 per cent to 3 per cent. more premium on Quebec and Montreal traders than on vessels in the general trades. These natural disadvantages cannot be overcome, and would be reluctantly exchanged by the shipowner for the safety of the River Plate and Black Sea passages. Some one has propounded the theory that to alter the natural trend of our trade into colonial channels

would be more profitable for the British shipowner because colonial voyages are longer; the British consumer would, in fact, have to pay more to the shipowner for the carriage of his food over greater distances. Were this true, it would not lighten the bills of our households. But the Australian trade is unpopular with shipowners because of the action of the local Governments, and the Canadian trade is penalised by insurers. Mere length of voyage is not worth consideration when the conditions under which it has to be undertaken entail such greatly increased expense. What a curious mind is necessary to praise the economic policy which aims at making our national food supplies come from the most distant or most dangerous rather than from the cheapest and most convenient sources!

The Injustice of Subsidies.

All this may be granted by the Protectionist, but he thinks it necessary to draft a memorandum of "what he can get out of it." First of all he wants subsidies similar to the subsidies of France and Germany, and he made a great effort through last year's Shipping Subsidy Committee to state his case and procure a report in his favour. He was met by the reply that to give subsidies to selected Lines would be unfair to all the excluded Lines; to subsidise all Lines would be unfair to Tramps; to subsidise Tramps and Lines would be a financial undertaking so vast as to be beyond the capacity of

the Exchequer. The Committee might have added that to subsidise shipping at all would have been unfair to the taxpayer.

Then the shipowner urges that foreign shipping is not hampered by Board of Trade restrictions, and it competes against us in our own ports at a great advantage. That all vessels of whatever nationality using our ports should have to submit to the same Board of Trade regulations for safety of life and property is a claim so just that no Government, Free Trade or Protective, need hesitate to relieve this British grievance.

The Coasting Trade.

Last of all, it is urged that France, Russia, Spain, Portugal, and the United States have reserved their coasting trades for vessels flying their own flags, which means that a large portion of foreign trade in which we once had an interest has been closed against us, whilst our coasting and intercolonial trade is open to the vessels of all nations. The result abroad has been that the coasting freights paid by the foreign merchants have been raised to some extent. The result at home has been no artificial restriction of competition or raising of freights, and the British shipowner has done his work so much better and cheaper than his foreign competitors that in our own coasting trade the foreigner is almost unknown. Russia some time ago restricted her Odessa-Vladivostock trade to

Russian vessels, and America declared that New York to San Francisco was to be considered a coasting trip and accordingly preserved. In the former case some injury was done to Tramps, and in the latter a few vessels were displaced. But whether the injury was large or small the fact remains that British shipping suffered by these restrictions. How are we to compel the Russian and American to throw open trades which he has closed to all except his own vessels? It is said that reserving our coasting trade would be the natural form of retaliation. As retaliation it would be ridiculously ineffective. Neither Russia nor America would care one cent., for they have not a single vessel in our coasting trade at present, and to say to them that by way of punishment we would exclude their vessels from our coasting trade until they reopened their own routes would induce them merely to smile at us.

We may conclude, therefore, that British shipping has little or nothing to gain by reviving the Navigation Laws for the home coasting trade. Nor could the Colonies give us much by closing their ports against the foreigner in the Intercolonial or Imperial trades, for we do the bulk of their carrying already. Nine per cent. of their colonial traffic is done in foreign bottoms; 91 per cent. in British. Expressed differently, it is remarkable that of our total carrying trade centred in the United Kingdom only 1¼ per cent. is done by the foreigner with our possessions across the seas. That 1¼ per cent. is all

that our Colonies have to give to British shipping by prohibiting the foreigner. We could not exclude all foreigners ruthlessly from our inter-Imperial trade, for let it be noted that France (except with Algeria), Germany, Holland, Denmark, Sweden and Norway, Belgium, Austria, and Italy, permit our vessels to trade with their oversea possessions. The only countries which prevent us and all other foreigners from invading that trade are the United States, Russia, and Spain. Their share of our inter-Imperial trade is only 5 per cent. of the total foreign tonnage thus engaged. In other words, by dealing with this we should at the outside be able to transfer only ½ per cent. of our colonial trade; 99½ per cent. would remain where it was—and that ½ per cent. represents of our total trade in and out of the United Kingdom a paltry $\frac{1}{16}$th per cent. For such a slender advantage (apart from all other considerations) we should be reckless in risking any portion of our vast foreign trade. We carry for Russian, German, Belgian, Dutch, French, and American customers great masses of merchandise. Last year the estimated British tonnage entered and cleared with cargoes and in ballast at ports in these countries in trade with other foreign ports in 1901 was—

Russia (1900)	3,674,000
Germany	2,671,000
Belgium...	4,504,000
Holland...	2,730,000
France	7,253,000
United States	14,421,000

It is impossible to obtain statistics which will give us any accurate measure of the extent to which purely foreign carrying is done by our merchantmen, but one startling fact may be drawn from a comparison of the tables showing the increase of our exports and imports, and the tables showing the increase of British tonnage. That fact is that we have increased our tonnage in greater ratio than we have increased the volume of our United Kingdom out and home cargoes. The great surplusage of this tonnage has therefore been employed in purely foreign trade. Indeed, let any one inquire from the innumerable shipping firms in Cardiff, Hartlepool, the Tyne, Clyde, or Forth, and he will find that among large Tramp steamers about eight out of ten conclude their homeward voyages at ports other than those within the British Isles, and indeed there are scores of vessels hailing from these ports which have not been in the United Kingdom since they were built, or come home only occasionally in order to complete the repairs necessary for them to retain their Lloyd's classification.

Of course we are so valuable to the foreign merchant that his Government would be cautious in prohibiting the entry of our vessels to his ports, but we must face the fact that the tonnage at present afloat is abundant beyond the world's immediate requirements. A foreign Government might therefore find this a suitable time for an attack on our

shipping. No other of our national industries is so vulnerable and none so sensitive. Let it receive one sweeping blow from a government engaged in playing tricks with our national fiscal policy, and its recovery would be slow. If once we enter on a fiscal war with other states, shipping will be the first to suffer. It is true that a purely hostile tonnage tax on British vessels or their exclusion from foreign ports would be injurious to the hostile State as well as to us. But what we have to think of is the injury to ourselves, and that injury would spell idleness for hundreds of our vessels and ruin for their owners.

THE CUTLERY TRADE OF SHEFFIELD

By Frederick Callis

THERE are very few of the ancient industries of Sheffield that have undergone more sweeping changes under the reign of Free Trade than the manufacture of goods included under the head of "cutlery." Indeed, so entire has been the transformation that points of comparison between the condition of things to-day and what they were a century ago are extremely difficult to find. The last half-century has been one of progress—steady, sustained progress—beneficial alike to manufacturers and to workmen. This statement will no doubt be canvassed, but it is nevertheless true and can be supported by facts. Fortunes have been built up of such proportions as were never dreamed of by the Fathers. The workmen now carry on their labours and spend their leisure amid surroundings to which the proverbially "poor cutler" of a former generation was an absolute stranger.

An Ancient Industry.

The cutlery trade of Sheffield has a most ancient history, and it is as interesting as it is ancient. When it was established is unknown, but it had certainly taken deep root here in the days of Elizabeth. The cutlers were then little better than serfs, working under the most repressive of restrictions, and for the scantiest possible remuneration. The selection of Sheffield as the seat of this branch of trade was a very happy one, for it furnished advantages such as few, if any other, places possessed—advantages that meant much more in years gone by than they do even to-day. No fewer than five streams flow down the valleys into Sheffield from the hills and moors around, furnishing an abundance of water power. And coal and iron and stone are all within easy reach. Business began with the manufacture of the ancient "thwytel," as Chaucer called it, and passed on to the jack-knife, the spring knife, and other improvements alike in table and in spring cutlery.

A Century's Progress.

It is, however, during the last century, and more especially the latter portion of it, that the most remarkable developments have taken place, alike in the manner in which the business is conducted, in modes of manufacture, and in the conditions of life of those engaged in the trade. A variety

of causes have contributed to bring these changes about. They are, the greater energy and enterprise of manufacturers and the increasing steadiness and intelligence of workmen; the reliable use of steam in place of the uncertainty of the old water power; the free adoption of machinery whereby much heavy manual labour has been saved and the output vastly increased; the operation of the Factory Acts, securing better sanitary surroundings and, as a consequence, improved health and longer lives.

It is extremely gratifying to be able to record that under Free Trade both employer and employed have prospered. There are cutlery manufacturers in the city of Sheffield to-day who are wealthier beyond all comparison than their ancestors. They live in an altogether more affluent style, in palatial residences situated in charmingly laid-out grounds. They have their carriages, their hunters, their moors, and other similar luxuries. Many of them have had the best education the country can furnish, and are men of culture and refinement. They know little or nothing, by personal experience, of the rough side of life with which their ancestors were familiar. On the other hand, a hundred years ago many of the leading cutlery manufacturers lived in houses at the entrance to their works or close by. They commenced work with their men at five or six o'clock in the morning, and were at it until eight or nine o'clock at night. Years ago,

when new premises were built in Norfolk Street by Messrs. Joseph Rodgers and Sons, the modest residences of the partners were placed on each side of the entrance gates. Mr. Michael Hunter, the founder of the firm of Hunter and Son, whose grandson has just been elected to the high and honourable office of Master of the Cutlers' Company of Hallamshire, in his earlier days lived at his works in the Wicker; and what was once his "best room" was afterwards utilised as an office. The older members of the trade are full of interesting reminiscences of the modes of life of the masters of their younger days; how they used to travel through the country in search of orders on horseback with their samples and even goods in panniers across the horse; and the rush there was to have their wares ready for the stage waggon as it came lumbering through the town.

Growth of Huge Establishments.

Perhaps no stronger or more palpable proof of the advantages of Free Trade could be furnished than a walk through some of the cutlery establishments of to-day. They are extensive beyond all comparison with those of former days; perfect in the arrangement of departments; and fitted up with the most up-to-date machinery and other accessories. It is only necessary to name such works as Messrs. Joseph Rodgers and Sons, Messrs. Harrison Brothers and Howson, Messrs. James Dixon and Sons, Messrs.

Walker and Hall, Messrs. Mappin and Webb, and several more—any one of which would swallow up several of the factories of a bygone age. It may be said that all these firms are silversmiths as well as cutlers, and that they owe their prosperity as much to the one industry as to the other. That is no doubt perfectly true; but it would be easy to show that the causes which have led to the development of the cutlery branch have been equally powerful in their operation on the silver and plating branches.

A Manufacturer's Views.

An admirable illustration of what has been said is furnished by the history of the firm of Messrs. Harrison Brothers and Howson. Their business was established over a century ago by Thomas Sansom and Sons, and in 1847 it was purchased by Messrs. J. W. Harrison, H. Harrison, and W. Howson. In that year the cutlery trade was so depressed that the workmen were glad to sweep the streets for a living. A change came, and the new firm began to prosper. Their premises in Norfolk Street were extended again and again; additional works were acquired in another part of the City; and still more accommodation was needed. Some six years ago the firm purchased property in Carver Street covering about an acre of ground, and thereon they have erected a thoroughly up to-date manufactory replete with all modern appliances and conveniences. The

internal arrangements are as complete as skill and long experience could suggest. A prominent feature of the new works is the power-house with its engine of 250 h.p.; its powerful dynamos, and its motors scattered through the place, furnishing alike force and light. The firm employ about seven hundred people. The progress made by this firm is typical of that of others mentioned.

Mr. George Howson, the senior partner of the firm, was asked what, in his opinion, had been the effect of Free Trade upon the cutlery industry of the City. He replied that the trade had more than held its own in face of the high tariffs and keen competition of other nations. There had been progress in the output of high-class goods in the last fifty years, but not by any means to the same extent as in medium and common qualities. This was probably to be attributed to the introduction and free use of machinery which lent itself with more satisfactory results to the production of the lower than to the higher grade wares. Best table cutlery is made now after very much the same methods as it was a century ago, and there is little probability of change, as it is not an article that lends itself to alteration. High-class steel is so hard that attempts to manipulate it by machinery break the tools, and heating it to make it work easily would destroy its temper and reduce it to common steel. For the production of medium and common goods machinery is most valuable—

indeed, a necessity of the times. While a forger is making a handful of blades, a machine will turn out a barrow full.

Coming to the position of the worker, Mr. Howson compared it with what it was in 1847, when his father commenced business, and stated that not only in money wages, but also in the conditions under which the workman does his work, and indeed in all directions, there has been distinct improvement. The introduction of the emery wheel has relieved the cutler of much exhausting labour. "Half a century ago you did not see," remarked Mr. Howson, "a cutler wearing a collar, and it was most unlikely that he had a Sunday suit. I have heard my father speak of one workman of his earlier days, an ivory cutler, who was known as 'Ivory Bob.' He was dubbed 'the gentleman of the firm' because he wore a collar and a top-hat! You may take it generally that the workman now is twice as well off as were his forefathers." Mr. Howson spoke most approvingly of the working of the Factory Acts and of the judicious manner in which they have been administered in Sheffield.

A Chat with a Working Cutler.

These opinions of a prominent employer can be amply confirmed by the recollections of the older workmen. Take, for example, Walter Barnes, an admirable type of the self-respecting working

cutler. His memory travels back to the days when the position of workers in the cutlery trade was totally different from what it is now. He remembers very distinctly how his father was "chaffed" for going to live in a house which was £10 a year. That was in the days of the £10 franchise, and his father wanted a vote, and had to pay for it by an increase in his rent bill. Now we have household suffrage.

"In those days," said Mr. Barnes, "the cutler was very poor, and in his poverty was often addicted to drink. Not one in twenty had a second suit of clothes, and the only change in his dress on a Sunday was that he put on a clean apron! All that has been altered. Now in the homes of many you will find the floor covered with oilcloth, a good table and sofa, and even a piano—although perhaps purchased on the hire system. Yes; the position of the cutler in my time has altogether changed. He is a steadier man, earns higher wages, and he has comforts and sources of enjoyment unknown in former years.

"There was no School Board with its free education in my young days," continued Mr. Barnes; "and before I was ten years of age I started to work. I had to leave home at a quarter-past five in the morning and was kept at work until nine o'clock at night. If I got off at four o'clock on Saturday I felt as though I had secured a day's holiday. Now we begin at half-past eight and stop

at six, and at twelve o'clock on Saturdays. The cutler and all his surroundings have undergone a complete change for the better."

A Master of the Old School.

Another master whose opinions it is interesting to quote is Mr. Charles Ibbotson, one of the old school of cutlery manufacturers, who was once a workman himself. He can recall the days when most of the common goods, and especially the well-known Barlow Knife, of which enormous quantities used to be sent to America, were made in the surrounding villages—Stannington, Wadsley, Worrall, Dungworth, and Hillsbro. Forgers, grinders, cutlers in the employ of "Little Mesters" were scattered all over the district. In many instances the men had a bit of land attached to their house or their shop and were able to eke out a living by growing vegetables. There were no Factory Acts in operation then, and when there was a big rush of orders men and apprentices would work from four or five o'clock in the morning until nine or ten at night. The masters might have been seen rushing round and offering bounties to men to work for them.

"I used," said Mr. Ibbotson, "to work every day in the week, never taking a holiday or going on the drink, and my wages averaged a guinea a week! I used to make seven dozen Barlow Knives a day, and was paid sixpence a dozen. By the way the

material is put into his hands a cutler can now make eight dozen where I made six dozen. I remember once when trade was bad and my master had stocked all his money I went on working for him on credit until he owed me £33. The 'Little Mesters' at the end of the week used to bring the goods down to Sheffield on donkeys to sell, and when trade was good the merchants would meet them on the road and bid against each other to get the knives. Barlows were sometimes sold at 11s. per gross and at all prices up to 21s. per gross. If you had met some of the 'Mesters' going home you could have told by their appearance how Barlows had gone. I need not say anything about the masters, but with regard to the workmen their position in my time has wonderfully improved, and the improvement is going on. The cutler now has thrown open to him parks and recreation grounds and woods; he has the use of free libraries for himself and free education for his children; and lots of sources of enjoyment to which in my early days we were entire strangers."

Views of a Prominent Labour Leader.

There are few men in a better position to form an opinion of the cutlery trade of the present as compared with the past than Mr. W. F. Wardley. He is a member of the City Council, and a very prominent worker in all movements for the advancement of the people. For nearly thirty years he

toiled as a table blade forger, and only left the hammer and the anvil to take up the duties of Secretary to the Table Blade Forgers and Strikers Union. In this position he is brought into personal contact with employers and employed alike throughout the City.

"I can remember well," he said, "hearing conversations between my father and the older members of the trade of what they had passed through in the 'good old days of protection.' There were then, as there have been since, periods of good and bad trade, but it was evident from what they said that when bad trade did come the sufferings of the people were very much worse and more widespread than they would be now.

"And why? Because all the necessaries of life were so much dearer, and the little money obtainable from parish relief or any other source would go practically no way in what it would purchase. A man, his wife and family would want three stones of flour a week, and this at 4s. 6d. per stone, as it was in my father's younger days, would mean 13s. 6d. per week. The price of flour to-day is 1s. 6d. per stone, so you see the difference in the bread bill alone. The fact is the poor could not obtain sufficient money to buy all the bread they needed, leave alone meat and other necessaries. The acute sufferings of the poor cutler when trade was bad in those days can hardly be realised by us.

"Of course, in some branches of the trade, such

as table blade forging, fewer men are employed now; but that is not because of any falling off in the demand, but because of the wide introduction of machinery. Many classes of goods are now made by machinery that used to give employment to a large army of hand forgers. They have found other and better paying work. There can be no doubt that the general condition of the working cutler during the last half-century has decidedly improved. He works under healthier, easier, and less exhausting conditions altogether. To-day he would not submit to some of the inconveniences and annoyances which his forefathers thought belonged to their stand in life. For instance, an apprentice in the old days recognised it as part of his duty on a Saturday to break so much sand to scatter over the floor of his master's house after it had been washed, or fetch water from the wells for use during the following week. I had to break sand in my apprentice days. As far as his means will allow, the cutler has moved upwards. He is better educated; his wife and family are better dressed, and he has a more comfortable home. Many things he then regarded as a luxury, only obtainable at intervals at the best, he now claims to be a necessity, and gets them."

In reply to a question as to the tariffs put on our goods by other nations, Mr. Wardley said :—

"The cutlery trade has no doubt been hampered by foreign competition, but we must remember that

that would be there whether we had Free Trade or Protection. America, Germany, and France, who used to be amongst our best customers, have become manufacturers themselves, and are in a position to supply their own markets, and would do so tariff or no tariff. In my judgment, if it had not been for Free Trade bringing in its train cheap food and improved conditions of life all round, we should have been very much harder hit than has now been the case, for we should have lost some foreign markets anyhow, and we should not have gained the splendid round of markets which we now possess. No; we don't want, either by Protection or any other system, to return to the state of things that prevailed in our trade during the early part of last century, and there is no fear of its coming to pass. The country would not stand it."

THE "LITTLE MESTER."

Under the reign of Free Trade that very ancient institution the "Little Mester" is rapidly disappearing, partly from the different way in which production is carried on, and partly from the operation of the Factory Acts. He made very cheap goods; his people worked often amid most insanitary surroundings; he was dependent upon the sale of his output at the end of the week for the wherewithal to pay even the poor wages he could afford; and the income of both employer and employed was of a very precarious character. The trade is being con-

centrated more and more in the hands of men of capital, who own large, light, airy shops, who have the most efficient up-to-date machinery, and who have plenty of capital at command. While alluding to the "Little Mester," with all respect for the part he played and the work he did in the past, it has to be admitted that he was a great obstacle to progress. He would not be convinced that the markets of the world were changing, and that what suited the grandfather and father would not please the son and grandson. The head of one large firm remarked, "We spend considerable sums of money in sending our travellers to the four quarters of the globe for orders, and when we have received their reports and samples of what was wanted, the 'Little Mester' has stood in the way of the suggestions being carried out." There are many instances in which the "Little Mester" is now being employed by a big firm as ganger over a team of cutlers. They work in a large shop, and by co-operation and subdivision of labour, goods are produced in enormous quantities at a minimum of cost.

Pen and Pocket Cutlery.

Although it has not been found possible to introduce any very great variety of patterns in table cutlery, there have been endless developments in pen and pocket knives, and the introduction of new designs is still going on. Up to the end of the seventeenth century the spring cutlery, though good

in quality, was extremely plain and sadly wanting in finish. The trade entered upon a new era in 1820, when what is known as the "Wharncliffe Knife" was invented. Since then leading firms have devoted unremitting attention to the production of novelties and specialities, and such knives are made to-day of the most costly material by the most skilled of workmen. In addition to steel goods, the cutlery trade of the present day embraces the manufacture of silver or plated knives and forks for fish, dessert, butter, &c., with handles of pearl, ivory, and other costly material. By stamping, chasing, etching, and similar processes, the ornamentation of these goods has been brought to great perfection, and the increased wealth of the nation admits of a very large business being carried on in all these productions. The trade no longer has to depend on the wants or whims of a few rich people, for these articles of comfort and luxury are now to be seen on the tables of the many.

Scissors and Razors.

The branches of the cutlery trade devoted to the manufacture of scissors and razors have passed through a period of serious troubles, that were largely of a preventable character. Instead of recognising the necessity for change in methods of production in face of growing competition of foreign rivals, the men generally fought against it, and trade was literally driven away. A prolonged

strike some thirty years ago in the scissor trade let the Germans into our home and foreign markets, and it was found impossible to drive them out. By the tardy adoption of machinery which the foreigner had long been using much of our trade is being gradually won back. Another trouble was caused by a change in fashions. The days are not long past when there was a brisk demand for the most expensive and elaborately worked scissors Sheffield could produce; but they are not much wanted now, either for the home or foreign markets. Russia, for example, was once a good customer for fine scissors, and bought largely at sixty shillings per dozen; now they want them at about six shillings per dozen. The demand is for a useful, rather than an ornamental, article at a moderate price, and Sheffield manufacturers are endeavouring to meet it.

Again, the development of the razor trade was checked by the introduction of the German hollow-ground razor. For a long time the Sheffield grinder refused to take it up, and makers had to send their blades to Germany to be ground. He has come to a better frame of mind, and now hollow grinding is done in Sheffield in as great perfection as can be turned out on the Continent. The Sheffield-made razor is regaining its position of supremacy not only in our home market and Colonies, but in India, South America, and elsewhere. Some houses still do a good business in fine razors with America.

Here again it has been of immense advantage to have the world as a market rather than two or three countries only, for the output by many firms is far in excess of anything possible in olden times.

Adoption of Machinery.

Reference has been made to the introduction of machinery to the cutlery trade. This was not done without much misgiving on the part of manufacturers and the keenest opposition from the workers, who believed they saw in it the ruin of the industry. It is scarcely half a century since Mr. Michael Hunter put down a trip hammer for forging blades, the work having hitherto been done by hand. The men were so incensed at his action that there was danger of his place being blown up, and the manipulators of the new tool had to be under police protection. Those were the days when men's tools were "rattened," when houses and works were blown up with gunpowder, and murders were committed. The machine, however, had come to stay, and developed into the steam hammer, the automatic air hammer, and the spring hammer, each introducing an improved system of forging and cheapening production. Then came the machine for "flying" blades, *i.e.*, cutting them out of the bar of steel; and so extensive has this mode of manufacture become that the supplying of blades to the trade is a separate industry. As an example, reference may be made to the manufactory

of Mr. Samuel Staniforth, of the Central Cutlery Forge. His machinery includes forty hammers and five pairs of eccentric rolls. His output is a thousand gross of blades per week—more, probably, than all the hand labour in Sheffield could produce. This free use of machinery in turning out blades, springs, scales, and other parts, has saved the labour of large numbers of workmen who are now employed at other work, and at the same time it has enabled our manufacturers to compete successfully with foreign rivals in almost all the markets of the world.

Satisfactory as the cutlery trade is, it might have been even more prosperous if masters and men had co-operated more heartily together. There is, however, much to be said for the men in the attitude they often assumed. They were poorly paid; much of their time was often wasted in waiting for work or in collecting the material to do it; and when employers suggested change of patterns or the utilisation of machinery the men were exacting in their demands, and consequently valuable improvements had to be abandoned or postponed. It is the opinion of many that if the Sheffield cutlery manufacturers had had to face the foreign competition that has prevailed without the advantages of Free Trade neither they nor their workpeople would be enjoying the measure of prosperity that now prevails.

Hafting Material.

To attempt to tax either the imports or the exports of the many varieties of material required for the hafting of cutlery would mean ruin to the trade. England has been the market of the world for ivory, pearl, the horns of the stag, the elk, the antelope, the rhinoceros, the walrus, the buffalo, and the ox, as well as the leg bones of the ox and the giraffe, and so on.

The principal of one of the leading firms who supply the trade with hafting material, who was consulted on this point, said he had no doubt whatever that Free Trade had been of the utmost benefit to Sheffield. Where they had partially lost one market through high tariffs they had gained others, and the output of cutlery now is something enormous—far beyond anything previously known. "Firms like ours," said he, "are in a position to know, because our fingers are on the pulse of the trade. There is more ivory and pearl and other natural products cut up to-day than the outside world has any conception of. Very considerable quantities are used up locally, but still more of some kinds go abroad in the form of handles and scales. Some of the leading foreign cutlery manufacturers draw all their hafting material from here; and not only is a market thus found for much that is unsaleable at home, but employment is furnished for an army of people. It is, however, in the

imitations of natural products that the increase is seen—imitations of ivory, stag, tortoiseshell, and the rest, so perfect that only an expert can detect the difference between the real and the spurious. Much of the best of these imitations comes from America, Germany, and France, and their use is on the increase. To attempt to interfere with the freedom with which this trade has been carried on would be most disastrous, and it cannot be believed that any one would be so unwise as to do it."

A World-Wide Market.

Protectionists are never weary of calling attention to the marked falling off there has been in the exports of cutlery to the United States, as the result of the high prohibitive tariffs imposed by that country. There was a time, well within the memory of many, when the home and the American markets purchased practically all the cutlery Sheffield could produce. Having so restricted an area in which to operate was sometimes attended by very disastrous consequences. It occasionally happened that the demand from across the Atlantic collapsed entirely, and then workmen were reduced to the severest straits, especially those whose employers were not in a position to keep them going on stock. For years Sheffield exported to the States over £200,000 worth of cutlery per year; but in modern times the Americans have established manufactories of their own, and have fought hard to secure the

supplying of their own markets. In this they have only been successful by imposing heavy duties on Sheffield goods. America, however, is still the chief market for the Barlow Knife, as well as for knives for shoemakers, butchers, and other special lines of trade. High-class goods also go over in considerable quantities.

What is often described as the collapse of trade with the United States has been a blessing in disguise to many of the principal Sheffield manufacturers. As the door into America closed they turned their attention in other directions, opened up new and even more profitable markets, and today there is scarcely a corner of the world which they do not cover and into which their goods do not go. They are being sent to all our Colonies and Eastern possessions; to China and Japan; to South America; and, in spite of tariffs and competition, to every European market. It is beyond dispute that the productions of reputable Sheffield firms are in demand the world over, and that demand is on the increase. One immense advantage of this change, all come about under Free Trade, is that Sheffield is no longer dependent upon one or two markets, subject to extremes of fluctuations, but has the whole world to glean over for orders, and experience has proved that if there is little doing in one direction it is more than compensated for by increased activity in another.

THE TINPLATE TRADE

By W. Llewelyn Williams, M.A., B.C.L.

THE recent history of the tinplate trade affords a direct and interesting illustration not only of the value of Free Trade but of the needlessness if not the futility of a policy of retaliation. It shows that trade, if left free and untrammelled, will find for itself its natural channels, and that even if it is deflected from its course by artificial barriers, it will find for itself another channel which no Government, however wise and paternal, and no individual, however experienced and far-seeing, could have made for it. In a word, the chequered history of the British tinplate trade exemplifies the wisdom of non-interference by the State with the fortunes even of "a ruined industry."

It would not be to the purpose to give here any elaborate history of the tinplate trade. Suffice it to say that it began to assume considerable dimensions in South Wales and Monmouthshire early in the sixties. For some years the British manufacturer

had no competitor in any other country, and naturally the trade increased by leaps and bounds. The extent of the output doubled every ten years, till in the years 1887–90 the average yearly exports amounted to 399,329 tons, of the value of £5,682,641. Of this enormous quantity the United States took as much as 304,695 tons, of the value of £4,278,667.[1] Three out of four of the British manufacturer's eggs were in the American basket. The whole of our exports to other countries only amounted to 94,634 tons, valued at £1,403,974. Seventy-six per cent. of this valuable trade was thus with the United States.

[1] The following figures, which were issued by the American Iron and Steel Association, giving the amount of tinplate imports by the United States since 1871, will show at a glance how rapidly and one-sidedly the Welsh trade grew.

IMPORTS OF TINPLATE INTO THE UNITED STATES.

Year.		Gross Tons.	Year.		Gross Tons.
1871	...	82,969	1887	...	283,836
1872	...	85,659	1888	...	298,238
1873	...	97,177	1889	...	330,311
1874	...	79,778	1890	...	329,435
1875	...	91,054	1891	...	327,882
1876	...	89,946	1892	...	268,472
1877	...	112,479	1893	...	253,155
1878	...	107,864	1894	...	215,068
1879	...	154,250	1895	...	210,545
1880	...	158,049	1896	...	119,171
1881	...	183,005	1897	...	83,851
1882	...	213,987	1898	...	66,775
1883	...	221,233	1899	...	58,915
1884	...	216,181	1900	...	60,386
1885	...	228,596	1901	...	77,395
1886	...	257,822	1902	...	60,115

The English home market, in the meantime, had been comparatively neglected. Enjoying a practical monopoly of the world's markets our manufacturers could afford to pick and choose, and they naturally cultivated that market which ensured for them the most speedy return and the largest margin of profit.

It was not to be expected that the shrewd commercial men of the United States would stand idly by without making an effort to capture for themselves this profitable industry. On October 1, 1890, the McKinley Tariff became operative, though the section dealing with tinplate did not come into operation till the first of July following. Up to that time, the import duty on tinplates was only £4·60 per ton. The new Tariff immediately raised it to £10·12 per ton—an *ad valorem* duty of over 70 per cent. In spite of the Tariff, however, the Welsh export of tinplates to the United States did not immediately cease. The American manufacturers were not able for a year or two to cope with the home demand. They required time to build their works, to establish their plant and machinery, and to train their workmen. The annual average of British tinplate exports to the United States in the years 1887–90 was 304,695 tons, valued at £4,278,667. The annual average in the years 1892–93—after the McKinley Tariff had been in operation for two years—was 267,040 tons, valued at £3,527,568. This decrease was not due directly to the new Tariff. In the two years pre-

ceding the Tariff British manufacturers were naturally eager to take every advantage of their last opportunity to supply the American market. They erected new mills—the number of mills increased from 478 in 1889 to 519 in 1891—they worked more shifts, and they increased their output by about 30,000 tons. Every box of tinplates that could be finished in time was sent to New York before July 1, 1891. The "boom" was followed by the inevitable "slump."

The Boom of 1891.

This flooding of the American market had two results. In the first place, it made the year 1890–91 (and to a lesser degree the year 1889–90) the *annus mirabilis* of the British tinplate trade.[1] Protectionists constantly institute comparisons between the trade as it existed in 1891 and now. Such a comparison is both unfair and misleading. The year 1891 was exceptional even in the prosperous history of the tinplate trade. It is impossible to find out exactly what profits were earned by British producers in that year. Most of the larger tinplate works are

[1] The exports to the United States were slightly higher in 1888–9 than in 1889–90, and in 1889–90 than in 1890–1; but the value was naturally higher in the latter year. In any comparison of exports to the United States it would be fairer to take the year 1887–8, when 298,238 tons—the highest figure reached up to that time—were sent out. In the text, however, I have accepted the Board of Trade figure of 304,695 tons as the annual average for the years 1887–90.

family concerns, and the secrets of such firms are jealously guarded. With the affairs of one such works the present writer is familiar, and in 1891 it paid a dividend of 100 per cent. on its capital. There is no reason to believe that other works were less fortunate. The second result was that there was for the next year or two a glut of tinplates in the American market. So that by the time the market had righted itself the new-born American works were in a position to supply to a considerable extent the home demand.

There exists no record to show the extent of value of the British consumption of tinplates. It has been roughly estimated that in 1889 only about 40,000 tons, or less than a tenth of the whole output, were required for the home market. It has already been pointed out that only a fourth of the total exports went to other countries than the United States. When therefore the McKinley Tariff was passed the outlook appeared so gloomy that several of the leading Welsh manufacturers, despairing of ever making a living in this country, transplanted their works to the United States. Hundreds of the best workmen also emigrated, though the Welsh workman is notoriously attached to his home and his country.

By 1894 the American manufacturer had found his feet, and was able to supply the home demand without the aid of the McKinley Tariff. In 1892–93 the annual production of tinplates in the United

States was 36,993 tons. On August 28, 1894, the Wilson Tariff of £5·52 per ton took the place of the McKinley Tariff of £10·12 per ton. The reduction in the duty did not diminish the American output. On the contrary, it went up in 1895–96 to 137,014 tons, while the British exports fell to 168,063 tons. Many of the British makers gave way to despair. One of the largest manufacturers in South Wales told the present writer in 1896 that no one would ever again make money in this country out of the tinplate trade, and in the following year he showed the honesty of his conviction by selling all his interest in the industry in which he had amassed a fortune—another instance of the folly of founding a fiscal policy on gloomy anticipations as to what may happen in the future.

Though the American production had grown to such huge dimensions, on July 24, 1897, there was still another change made in the tinplate tariff. By the Dingley Tariff of that date the import duty was raised from £5·52 per ton to £6·90 per ton, at which figure it still remains. It is perhaps not without significance that the Dingley Tariff was followed in December, 1898, by the formation of a Tinplate Trust, called the American Tinplate Company, which is one of the subsidiary companies in the great Steel Trust. The effect of the new tariff was a further diminution of the British export, which fell in 1898–1901 to the annual average of 65,687 tons, valued at £806,600, while the American

production rose to 347,437 tons, and in 1902 to 366,000.

The Capture of New Markets.

So far the story is a melancholy one of disaster and ruin caused to a once thriving industry by hostile tariffs. The Welsh tinplate trade was deliberately aimed at by the American Protectionists. They had a unique opportunity, and they took full advantage of it. Never was there before a British industry which depended so largely on the American market. Seventy-six per cent. of our tinplate exports before the McKinley Tariff went to the United States. It was easy for the American Government to exclude us from its market, since the American consumer was presumably willing to pay the price. The policy succeeded; a staggering blow was delivered to the tinplate trade, from which it seemed unlikely ever to recover. But the vitality of free and unhampered trade in an enterprising and business-like community is so great, that it is never safe to despair of its existence even in the most critical hour. Had the British trade been a pampered and artificial growth, the spoilt darling of protective tariffs, the loss of the American market would have crushed it. But our manufacturers, driven back upon their own enterprise and initiative, soon found a way of readjusting their industry to the new requirements. They discovered new markets; they developed the great home market

which, in their flourishing days, they had somewhat neglected; they improved their methods; they modernised their machinery. In 1889 the average make per shift per mill was under thirty-six boxes. In 1902 the average had risen to over forty boxes. The result is, that while the 478 mills which were at work in 1889 only produced something like thirteen million and a half boxes of tinplates, the 397 mills at work in 1902 produced nearly twelve million boxes. The increased efficiency and economy produced by wholesome, if in some ways unfair and irritating competition, has enabled the British producer to triumph over his rivals in all the neutral markets of the world. Whereas in 1887–90 our export of tinplates to all countries other than America only amounted to 94,634 tons, last year they reached the enormous total of 246,727 tons. In 1902 we exported 47,000 tons to Germany, Holland, and Belgium, 31,000 tons to Russia, 23,000 tons to Canada, 19,000 tons to France, 19,000 tons to Australia, and 17,000 tons to India. This foreign trade is expanding year by year, and as the vast population of China becomes more accessible to western trade, the Welsh tinplate trade must receive a fresh stimulus. Protection would not benefit the tinplate trade in the least, for we are not threatened with the competition of any country in our home markets. In the neutral markets, where we have beaten our only serious competitor out of the field, a protective tariff would not help us, and with the

example of the United States before us, it is only reasonable to infer that there would be a greater wastefulness in production which in the result would imperil our position in every market except our own.[1]

Aided by Dumping.

It is somewhat curious, at first sight, that in spite of hostile tariffs and the enormous increase in the American production of tinplates, the United States should still continue to be our best customer. Last year, it imported 65,142 tons, valued at £887,432, from us, and during the half-year ending June 30th of this year, the trade and navigation returns show that the value of tinplates exported to the United States during that period was £384,000. Of course the figures show a lamentable decrease from those of the pre-tariff days, but the marvel is, that there should remain any trade with the United States at all. The explanation of this phenomenon throws an interesting light on the value of non-interference with trade.

[1] "Up to a certain period the domestic manufacturer was subjected to a minimum amount of competition, by reason of the exclusion from the home market, through legal barriers, of the foreign producer. This naturally retarded the development of technical and commercial skill on the part of American manufacturers. . . . Foreign competition was facilitated by the extravagant cost of manufacturing here. Protection furnished such heavy profits at the start that the incentive to economy of operation was in large measure removed."—The New York *Nation*, August, 1903.

It will be observed that our tinplate exports to Russia amounted in 1902 to 31,000 tons. A great part of this totally new trade has been caused by the development of the oil industry in Southern Russia. As already mentioned, the British manufacturer easily captured the Russian as well as all other neutral markets for two or three sufficient reasons. In the first place, knowing that he was not protected in any artificial way from competition, he was driven to adopt the most economical and "up-to-date" methods of manufacture. In the next place, Russia exports to us enormous quantities of grain (last year its total value was £9,498,000, or more than that of all the British possessions put together), and lately of oil. Shipowners, being assured of a profitable homeward cargo, are willing to take a low outward freight—an advantage which will be denied them if in the future we only import grain from our Colonies. In the third place, the overgrown American Steel Trust, as well as the German manufacturers, occasionally "dump" down in this country some of their surplus stock of steel and iron, sometimes at less than cost price. A tinplate is a thin sheet of iron or steel, which is coated with tin. Some of the larger works produce their own steel, but the smaller works have to buy their steel in the open market. When, therefore, steel is "dumped" in this country, our tinplate manufacturers are able to secure the raw material of their industry at a comparatively low rate. All these

causes have combined to secure for the British manufacturers the practical monopoly of the neutral markets, and among others that of Russia.

American Drawbacks.

Of recent years the Russian oil trade has become an important industry, holding its own with the Standard Oil Trust in the English market. This fact has had an indirect effect on our tinplate exports to the United States. In order to meet more easily this new and formidable competitor, the Standard Oil Trust required cheaper tin-cans. The other great American industries, which export tinned stuff to foreign countries, were in similar case. The result was, that the United States resorted to the method of "drawbacks," *i.e.*, under the law of 1897 it allows a "drawback," or rebate, on the exportation of articles manufactured at home from imported materials on which duties have been paid, equal to 99 per cent. of such duties. In the year ending June 30, 1900, the United States paid about £1,150,000 in "drawback" on some eighty classes of imported materials, nearly one-third being accounted for by the "drawback" on tinplates. In a word, the American tinned goods industry—tinned fruit, meat, fish, and oil—depends for its prosperity to a considerable extent on the British tinplate industry. The American producers, secure of an enormous home market and exaggerated profits, are not in a position to meet on equal terms the free

and unfettered competition of British manufacturers. In the autumn of 1902 the Standard Oil Trust invited tenders for the supply of tinplates—"oil sizes"—for a year's consumption. In spite of the one per cent. in favour of the American maker, and of the freight, the British tender was accepted. It is owing to the system of "drawbacks" that the United States is still our best customer. Our exports are practically confined to "drawback" plate.

Free Trade Efficiency.

The history of the British tinplate industry shows how "a ruined industry" can be revived and invigorated by the skill, courage, pertinacity, and enterprise of business men. Few thought in 1891 that the industry could survive the deliberate efforts of American Protectionists to crush it out of existence. No threat of "retaliation" would have served our turn. The United States could afford to ignore our threats. The doom of the tinplate trade seemed so imminent and inevitable that several of the leading manufacturers abandoned it in despair. Yet to-day the trade is in as flourishing a condition as it has ever been. The returns for 1902 show that we exported 311,869 tons as against an annual average of 399,329 tons in 1887–90, but these figures do not represent all the trade. It is estimated that in the years 1887–90 we produced an annual average of about 40,000 tons for home consumption, and that that amount has been more than doubled in 1902.

In fine, in spite of the apparently crushing blows delivered to the trade by the American tariffs, the output of tinplates to-day is almost as great as it was in 1891, and is steadily increasing. The pluck and enterprise of our manufacturers are being rewarded. In 1897 for instance, a large steel and tinplate works near Swansea was sold for £95,000. During the following five years the profits earned amounted to between £70,000 and £80,000. Nor is this an isolated or exceptional instance. The greatest tribute to the skill of our manufacturers and to the wholesome and stimulating effects of Free Trade lies in the fact that, not only is our production of tinplates now almost as great as it was in the pre-Tariff days, but that 24 per cent. of our tinplate exports still go to the United States. This result could not have been brought about by a policy of Protection or retaliation: it is directly traceable to our Free Trade policy.

CONFECTIONERY AND PRESERVE-MAKING INDUSTRIES

By Robert Just Boyd

THERE are certainly no industries in Great Britain which have greater reason to be thankful for a policy of free imports than those of confectionery and jam-making, which depend upon sugar for their raw material. Great Britain does not, and indeed cannot, produce sugar, and in order to have this commodity at a low price, free importation is essential.

It is indeed anomalous that Great Britain should lead the world in these industries, but this state of affairs has been brought about solely by her Free Trade policy. Germany, Austria, Hungary and France, all of whom produce sugar in large quantities, have no confectionery and preserve-making industries at all comparable with those of the United Kingdom. Until recently Great Britain has been the only country in the world

having an absolutely free importation of sugar. By this we have obtained much benefit, even from the protectionist policy of the sugar-producing countries.

It is not necessary here to go into all the details of the giving of bounties on the exportation and production of sugar. It is sufficient to point out that the competition to supply the only free market of Great Britain with sugar became keener and keener, and led to a gradual fall in price. British capital and enterprise were at once attracted towards this very cheap raw material, and goods were made from it which are now to be found in every British household. On the contrary, in the producing countries, owing to their fiscal policy, sugar was so dear that no sugar-using industries could thrive. This is a striking instance of a free country receiving all the benefit of the enterprise of foreigners, and shows clearly how the consumer in a protectionist country can be penalised to benefit those who enjoy an open market.

The confectionery and jam-making industries in Great Britain had very small beginnings. Early in the nineteenth century the cost of producing sugar was very high, and, in addition, all sugar was very heavily taxed. Produced from the sugar-cane in the West Indies and other tropical countries only, it had to be brought here in the raw state and refined. This was a costly and, at that time, a very primitive process, and the finished article was inferior

in quality, and quite unsuitable for the class of goods at present manufactured. Indeed, it was not until the introduction of beetroot sugar on the Continent that good refined sugar came into general use. The British refiner was content to turn out a low-grade sugar known as "pieces." This sugar was irregular in quality and inferior in colour, and was quite unfitted to form the basis of any further manufacturing industry of any considerable dimensions.

With the introduction of foreign refined sugar jam-making and similar industries became possible, and would speedily have grown to large dimensions but for the high duty on their necessary raw material. About the year 1855, considerable, though, when compared with to-day, very small confectionery and preserve-making industries had been established in this country, and a small demand for British jams and confectionery had been created abroad. But no drawback was then given on exports, and the high duty made export very difficult.

An Open Market Found.

At this time it occurred to Mr. Alexander Keiller, a native of Dundee, that a large demand could be created for export confectionery and jams if the sugar duty could be circumvented. With acute business intelligence, he looked for a free market, and found the same in the Channel Islands. He

promptly determined to secure the export trade of the world by establishing factories in this, the only free market. When established there, he found that his ideal had been more than exceeded, and no British or foreign firm could compete with his free export of confectionery and similar goods. The supremacy which he thus attained in the export trade was never assailed with success, and until the abolition of the sugar duty in Great Britain, his exports practically ruled the world's market for this class of goods.

In the year 1874 the sugar duty was abolished in Great Britain, and sugar was placed upon the free list. Development at once began, and many firms sprang up whose names were destined to become household words. Such well-known firms as Crosse and Blackwell of London, Cadbury Brothers of Birmingham, Fry and Sons of Bristol, Clarke, Nickolls and Coombs, Ltd., of London, Rowntree and Co., Ltd., of York, Batger and Co. of London, and James Keiller and Son, Ltd., of Dundee and London, began to make rapid strides in the various branches of the trade. Each year in succession found an increasing demand for their goods. More and more hands were employed—additional capital was invested with great benefit to the country; indeed, so large have these houses become that they now represent many millions of invested capital, and give employment to many thousands of hands. A visit to any of their work

would show the great prosperity which their success has brought to other trades in the country. Tins, boxes, cases, bottles, and all the necessaries of these trades have to be provided, and so great is the demand that many manufacturers of these goods cater solely for their requirements.

The prosperity of the jam-makers made fruit-growing in the country a profitable pursuit, and this branch of agriculture has prospered greatly. In the same way the development of the cocoa and chocolate trades here have enabled the West Indies to largely extend their cultivation of the cocoa bean, and the planters there have done exceedingly well.

The Introduction of Machinery.

As the trade in confectionery and chocolate grew, it became necessary to introduce machinery. In the early days, the only confectionery which was made consisted of boiled sugars which were commonly known as "Toffee" and "Barley Sugar." These were made by boiling sugar on an open fire, and the method of production was very primitive and inefficient. One of the chief items in the cost was of course labour, which, owing to the small out-turn, was very large. It is doubtful whether, in the early stages, more than a few hundredweights were turned out per week, whereas to-day there are many firms turning out hundreds of tons per week. The methods of production were gradually improved

owing to the continually increasing demand for the product. Mechanical genius and enterprise turned out machinery which hitherto had been undreamt of. The cost of labour in producing a ton of cheap sweets to-day is, in many factories, about 20s. per ton, whereas in the early days it must have been very nearly ten times that amount.

The engineering trades in this country thus found a large demand for confectionery machinery, and many engineering firms now make a speciality of this. To show the magnitude of this demand, it is not an uncommon thing for one factory to have over £50,000 worth of machinery. Electricity has in many cases been introduced as motive power, and an effort has always been made to keep abreast of the times. The export trade has continually increased, and, owing to our policy of free imports, these trades have been able to circumvent the high protective duties placed on their products by such nations as the United States, Germany, and France.

British preserves are still largely bought in the United States, in spite of a tariff amounting to practically 40 per cent. of their value. German sugar and fruit is re-exported to that country in the shape of jam, in spite of a heavy tariff, whilst France is a buyer of similar British products. Dutch sugar is returned to Holland in the shape of British confectionery, and in fact there is no country which does not purchase some proportion of the export of our factories.

This has been the prosperity of the past. Would that the outlook of the future were equally favourable! By the imposition of the sugar tax in 1901 a severe blow was dealt at all trades using sugar as a raw material. The sale of any food product is necessarily curtailed by a considerable rise in price, but in many cases it was very difficult to place the burden on the consumer at all.

The Importance of the Penny.

It will be easily seen that the confectionery trade is very much dependent on the purchasing power of the penny. Thirty years ago the price of sugar was so high that not more than 1 oz. of sweetstuff could be purchased with that coin. Gradually this price fell, and a larger amount could be purchased until, prior to the imposition of the sugar tax in Great Britain, ¼ lb. of sweetmeats of comparatively good quality could be purchased for that sum. No sooner was the tax imposed than it became necessary for all manufacturing confectioners to reconsider their position. With a tax of ½d. per pound, and a purchasing unit of 1d., it became very difficult for prices to be raised to the consumer without a complete alteration in the style of goods produced. For instance, the consumer had been accustomed to buy 4 oz. of common sweets for a penny, 2 oz. of a better quality for a like sum, and 1 oz. of what may be called fancy sweets for a penny. It thus became necessary to make the penny piece of sweetmeat

smaller, when goods were sold by the count, and to reduce the quality of other classes of confectionery when sold by weight, to meet this tax.

Fortunately the burden of the sugar tax was not fully felt, owing to two causes. In the first place, most manufacturers had anticipated it, and held large stocks; and secondly, the price gradually fell until it became possible to revert to the old and regular prices, when trade again began to revive.

The Brussels Convention.

A greater danger than the sugar tax was, however, looming on the horizon. The sugar tax was not protective, and was imposed to meet the urgent wants of the National Exchequer. This cannot be said of the Brussels Sugar Convention which has just become operative. By this Convention the sugar bounties, from which this country has derived so much benefit in the shape of a cheap foodstuff and raw material, are removed. The result is that the price of sugar has already risen 3s. per hundredweight from the lowest, and bids fair to become still dearer. This in spite of the fact that visible and prospective supplies of sugar were never greater than to-day.

The Brussels Sugar Convention was signed by Great Britain in the interests of the West Indian planters and the British sugar refiners, both of whom are protected by it. The West Indies produces roundly 250,000 tons of raw sugar per annum. The sugar-using industries of Great Britain require over

400,000 tons of refined sugar yearly, so that, apart from the great loss to the British consumer, it is clear and evident that the major trading interests have been sacrificed to the lesser. By this fatuous step, which was so clearly denounced by Mr. Winston Churchill in the House of Commons as a working model of a much larger scheme of Protection, the British Government secures for the foreign confectioner the cheapest raw material, and at the same time prohibits its use by his British competitor. Moreover, the manufactured product, even when bounty-fed, is admitted into this country, while the bounty-fed raw material is absolutely prohibited. Small wonder that the confectionery trades prefer Free Trade to this game of protecting the foreigner and penalising the Britisher. Unfortunately the Convention remains in force for five years, and its evil work cannot well be remedied. The sugar-using industries are, therefore, unanimous in urging that their grievances may be mitigated by the repeal of the sugar tax, and trust that their raw material will be placed on the free list in the ensuing Budget.

THE GROCER'S INDUSTRY

By J. Innes Rogers

THE general prosperity of a people is indicated to a large degree by the consumption of articles which are not the prime necessaries of life. People satisfy the first cravings of hunger with bread, and in northern climes with meat, before they will buy other eatables. If, therefore, the use of semi-necessaries, or luxuries, such as groceries, is large, it is a proof that a nation is well off. In the days of protection it may be truly said that the grocer's shop was supported by the middle classes and by the rich. Nowadays it is mainly kept up by the working classes, to whom in the palmy days of Protection even meat was practically unknown, while in Lancashire the diet consisted of porridge. The artisan now eats wheaten bread, meat, bacon, butter, cheese, and sugar, and drinks as much tea as he wants. Sixty or seventy years ago, not only were groceries out of the reach of even the better off workmen, but these commodities were the happy

hunting-ground of the protectionists. The East India Company had a monopoly of Eastern produce up to 1833. There were different duties on foreign and on colonial goods, and those duties varied with the distance of the producing market. All sorts of other fiscal follies were rampant. These heavy duties crippled the consumption of groceries, while every approach to freedom extended it.

CONSUMPTION OF GROCERIES, ETC., IN THE UNITED KINGDOM IN 1845 AND 1901.

	Total Weight.		Weight per Head of the Population.	
	1845.	1901.	1845.	1901.
Cocoa ... ... lbs.	2,589,000	49,800,000	0·09	1·02 lbs.
Coffee ... ... cwt.	266,000	283,000	1·23	0·76 ,,
Currants and Raisins cwt.	514,000	1,515,000	2·07	4·09 ,,
Sugar, Raw ... cwt.	4,856,624	11,938,000	19·58	32·18 ,,
Refined ... cwt.	6	21,075,000	nil	56·18 ,,
Molasses and Glucose cwt.	627,532	3,202,000	2·51	9.00 ,,
Total (Sugar, &c.)	5,484,162	36,215,000	22·09	97·36 lbs.
Rice ... ... cwt.	1,000,000	4,240,000	4·4[1]	11·43 lbs.
Tea ... ... lbs.	44,193,000	255,824,000	1·59	6·16 ,,
Tobacco ... lbs.	26,162,000	78,400,000	0·94	1·89 ,,
Wines ... ... gals.	6,736,000	15,202,000	0·24	0·37 gals.
Spirits ... ... gals.	27,778,000	45,210,000	1·01	1·09 ,,

[1] The Statistical Abstract for 1845 gives this figure as 1·59 lbs. per head, which is obviously wrong.

In connection with the preceding table it will be interesting to compare the following :—

DECENNIAL PRICES OF TEA, COFFEE, AND SUGAR,

From the Year 1787 *to* 1897.

TAKEN FROM THE TRADE CIRCULARS AND OTHER QUOTATIONS OF JOSEPH TRAVERS & SONS, LIMITED, OF 119, CANNON STREET, LONDON, E.C.

YEAR.	TEA IN BOND.		COFFEE, DUTY PAID.		SUGAR, DUTY PAID.			
			Roasted.		Raw.		Refined.	
	Per lb.		Per lb.		Per. cwt.		Per cwt.	
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1787	1 9½	14 0	2 4	4 6	50 0	78 0	54 0	121 4
1797	2 3	11 0	3 5	5 6	68 0	114 0	78 0	186 8
1807	2 10	18 0	4 4	5 6	56 0	100 0	54 0	186 8
1817	5 1	14 0	1 10	3 4	81 0	100 0	75 0	185 0
1827	3 1	14 0	1 1	2 9	64 0	80 0	57 0	160 0
1837	2 3	8 0	1 3	2 1	54 0	71 0	43 0	110 0
1847	2 7	7 0	0 10	1 10	33 0	56 0	33 0	75 0
1857	0 10	4 6	1 0¼	1 6	41 0	61 0	40 0	70 0
1867	0 6½	3 11	0 8	1 9	25 0	41 0	27 6	53 0
1877 [1]	0 7	3 10	0 11	1 7½	15 6	36 0	20 6	38 0
1887 [1]	0 4½	4 7	1 1½	1 7	9 9	17 6	10 6	19 9
1897 [1]	0 2¾	2 10	0 7½	1 8	8 0	17 0	8 0	16 6
June 30, 1902 [2]	0 3	2 6	0 7½	1 8	11 3	15 9	10 0	18 6

Sugar Duties were abolished in 1874, and reinstated in 1901.

The trade in groceries covers a great number of commodities, and the foregoing table is necessarily limited to the most important. The extraordinary increase that has taken place in the trade is mainly due to Free Trade, and is the best testimony to its success that could be produced.

[1] Sugar duty free. [2] Sugar dutiable.

No doubt other causes have helped, such as the development of railways and steamboats, but it is to be noted that similar progress in consumption has not been made in protectionist countries, the grocer in France, Germany, Italy, and Russia being a far less important factor than he is here. The consumption of sugar, for instance, is trivial on the Continent compared with the consumption in Great Britain.

At the present moment the lowest tea is dearer than in 1897, but the other goods are all cheaper. The tea duty was reduced to 6d. per pound in 1865, and stands at that now, though it has been as low as 4d. The average bonded value of tea thirty years ago was 1s. 9d. per pound; it is now only a little over a third of that amount.

The goods named above are the chief groceries used in 1845, but in addition to these it is to be remembered that the grocer now sells an enormous mass of things, in the aggregate perhaps as important as the list given. In 1845 he did not deal in such minor necessaries or luxuries as jam, biscuits, cakes, preserved fruits, canned salmon and meats, or in the farinaceous and proprietary foods now sold to so large an extent. Butter, bacon, cheese, and eggs were bought on the market by the public of the farmer. The spice trade, now an important one, was then trivial. In this way it may be said that the 1845 list of groceries was then fairly exhaustive, while the

general well-being of the public now not only permits enormously larger purchases of the old goods, but allows them to obtain from the same source vast quantities of goods which no grocer in the old times would have had a demand for, and many of which did not exist.

This vast increase in the consumption of groceries has necessarily led to an enormous development of the industries that are engaged in manufacturing the articles concerned, or in transporting them from the manufacturer to the wholesale dealer and thence to the retail grocer. A very large proportion of the traffic upon British railways and British steamboats is derived from the carriage of groceries. Finally, there is the industry of the grocer himself. The additional demand for groceries has necessitated an immense increase in the number and size of grocers' shops and in the number of assistants employed. Even in country villages the increased demand for groceries has made itself felt, and men who in the good old days of Protection would have been starving as agricultural labourers are now earning a good wage as grocers' assistants.

From these general considerations we may pass on to deal with some of the more important items in the grocer's business.

TEA.

Up to the year 1833 the trade was a monopoly of the East India Company, through whom alone

supplies were to be obtained, and who regulated sales and qualities as it seemed best to them. The old circulars of the wholesale houses are full of disputes and difficulties with this great monopolist interest. In 1833 the consumption was only 1 lb. 4 oz. per head; on the abolition of the monopoly it at once began to rise, and continued to do so till it reached 2 lbs. per head in 1852, when the duty was 2s. 2¼d. per lb. In 1853 and 1854 the consumption was stimulated by reductions in duty, but when an increased rate was imposed owing to the Crimean War, the consumption at once fell off. In 1865 the duty was reduced to 6d., and the consumption rose to 3·29 lbs. per head. Subsequently the duty fell to 4d., with the remarkable effect of nearly doubling the consumption per head as compared with thirty-eight years ago. The duty was again raised to 6d. during the Boer War, but in consequence of the great depression in the bonded price of tea, owing to over-production, the increased duty did not reduce the consumption as it would have done if prices had been normal.

One very remarkable development that has taken place in tea since the removal of the old monopoly is worth noting. With no protection whatever, British-grown tea from India and Ceylon has almost driven China tea out of the market, though formerly our entire supplies came from China. This is not the result of any preferential tariff. India has com-

plete free trade, and our tea duty is for revenue only. Yet British capital has built up in our tropical possessions a vast and still growing industry, which may yet supply the whole world with tea. Twenty-five million pounds of English capital are invested in this great enterprise which has already transformed vast districts in India and Ceylon, and furnished a striking illustration of what Free Trade can do in the way of developing industries. A further development of India and Ceylon trade is now in rapid progress. Direct exports of tea are being made from India and Ceylon to the United States, to Russia, Canada, and to other tea-consuming countries, though most of them are strongly protectionist. Thus British capital, invested under conditions of complete Free Trade in the tropics, is engaged in supplying goods to protectionist countries who will not take British manufactures direct. A triangular trade, not shown in the Board of Trade returns, is thus established. We first export capital, largely in the form of machinery, to India and Ceylon. We plant the tea gardens, and we draw the profit on the whole enterprise. In addition, British ships earn freight by carrying the tea. This is one of the indirect ways in which our surplus of imports over exports is accounted for. The tea itself, when it reaches England, represents to a very large extent the interest due to some Englishmen for the capital they have invested in tea gardens, and the payments due to other English-

men for carrying tea across the seas, not to England only, but to all parts of the world.

COFFEE.

Although our home coffee trade is not in so good a condition as it might be, our imports still keep up as we continue to do a large *entrepôt* or re-export trade in that commodity. London has indeed remained an important distributing centre for coffee, and this is a branch of trade which would be severely hit if we were to have retaliatory or preferential tariffs. Continental powers would retaliate by refusing to take colonial produce when re-shipped from London. The decrease in the consumption of coffee is believed to be largely due to the promiscuous and legalised use of chicory in this country. It is also due to the fact that coffee is more troublesome to make than tea, and much more costly. Taken together as a group, it will be seen that there has been an immense growth under Free Trade in the use of the warm stimulants, cocoa, coffee, and tea.

There is no commodity which used to be hampered by more protectionist nostrums than coffee. During the early part of last century there were separate duties on coffee coming from British-American Colonies, from India, and from foreign countries. These duties were crushing in amount. In 1826 fresh complications were introduced, and five separate rates of duty were established, according

to origin, which it is needless now to give in detail. It is only necessary to remark that an immense preference was given to our Colonies. Yet in 1841, in spite of this preference, 60 per cent. of our consumption was of foreign origin. On the other hand, in 1868, long after the equalisation of the duties on foreign and colonial coffee, our proportionate consumption of foreign fell to 18 per cent. The attempt to help the Colonies by a preferential tariff was, in fact, a complete failure, and they did relatively much better when that preference was abolished.

It is true that the proportion of the coffee imported from British possessions has since largely fallen off, but this is because the cultivation in Ceylon, which was formerly one of our chief sources of supply, has been practically abandoned through the plants becoming a prey to fungoid diseases. The enterprising planters of Ceylon, as soon as they found coffee failing, at once took to tea, with a success which all the world knows.

SUGAR.

It was often said in the old bread-tax days that corn and sugar went together as twin brethren of Protection. Except during the generation of complete freedom between 1874 and 1901, there were incessant debates and agitations turning round the sugar duties. It is said that in the space of forty years there were forty changes, great and small, and often

involving important principles. To revive these old controversies would be tedious at the present day, for most of them turn on points the very meaning of which is unknown to the present generation. At one time our Colonies had a monopoly of the supply of sugar, at another there was a differentiation between the East and West Indies, and for long periods foreign sugar was subject to a surcharge. Then, after the West Indian emancipation of slaves there was a distinction between slave and free-grown sugar. Finally, all these distinctions were swept away, and no difference was made in favour of different places of origin. Unhappily, even when this stage was reached our statesmen were still not content to tax sugar as such, but they must needs enter into the impossible task of levying the duty *ad valorem*. They based their scale upon the colour of the sugar, on the assumption that colour was a test of value. But in a very short time our imports were coloured to suit the Government colour scale. The sugar was then bleached by our home refiners, who thus obtained a bonus which enabled them to defy all competition from abroad. In this way a great protected industry grew up in England and Scotland, and it took fourteen years of agitation on the part of the home distributors to get rid of the bonus which these protected manufacturers were receiving at the cost of the nation. The result, in fact, was only achieved when the sugar duties were abolished by Sir S. Northcote in 1874. The twenty-

seven years of absolutely free trade in sugar that followed were attended with the most marvellous results. The consumption of this valuable food increased by leaps and bounds, and medical reports bear testimony to the extraordinary benefit conferred on the strength and physique of the generation that grew up under free sugar.

It was not only improved nutrition that duty-free sugar gave us, but also new and great industries. The confectionery and allied industries—jam-making, biscuit-making, and aerated-water-making—have developed enormously under Free Trade. These industries now employ about 117,000 workmen, whereas the refiners only employ 2,400. The refining industry, it should be noted, has not fallen off at all, though the contrary is constantly asserted. According to the statement prepared by the refiners themselves for use by the British delegates at the Brussels Convention the quantity of sugar refined in Great Britain increased from 591,000 tons in 1870 to 640,000 in 1901. Nor have our Colonies been ruined, for their sugar exports, which were 560,000 tons in 1887, had risen to 604,000 tons in 1901. In fact, in no other commodity have the transcendent merits of Free Trade, in promoting commerce and industry and in reducing the prime cost, been marked more than in the case of sugars.

Early History of Sugar Trade.

In the old days of colonial monopoly or preference we gave our colonists an immense price for their produce. For instance, the bonded value of West Indian Sugar for very many years was about 25s. per cwt., but our planters can now produce the same thing at 9s. per cwt., a reduction of nearly two-thirds. The difference enriched the West Indies and impoverished the Mother Country.

Apart from the question of the higher price which a colonial monopoly always means, there is the question of risk of capture in war from which foreign goods are exempt. How great that risk was in olden times may be seen from the following extracts from trade circulars. In 1779 Messrs. Smith, Nash, Kemble and Travers advised their customers thus :—

"Unfortunately we have just received intelligence of the loss of Grenada, one of our principal Islands, which has caused an advance on Raw Sugar of full 4/- per cwt., and as our other islands are likewise in Danger, we don't see a prospect of Sugar being lower, unless the two Fleets now coming Home, should all arrive safe, but this in the present Situation of affairs, is more than can be expected."

On the 30th March, 1782, the same firm wrote :—

"We think it necessary to inform you that in consequence of the late Loss of more of our Islands, Raw & Dry Sugars are advanced 6/- per cwt., Lump

and Loves 9/-, and we have too much Reason to apprehend they will yet be higher."

On seeking to account for the fiscal folly of our statesmen in connection with sugar it will be found that they have always committed the fundamental fault of considering the producer instead of the consumer. Unhappily they have continued to do so up to the present time. The sugar duties were reimposed to pay a part of the cost of the Boer War, and in putting them on the Government took advice from the refiners in this country and the West Indian Committee, both protectionist partisans. The result has been the imposition of what is known as the polariscopic scale. This is not only a costly and useless system, but it has been so arranged as to give a small protection to the refiners. They at first denied this fact, and then minimised it. Finally, the Foreign Powers represented at the Brussels Conference declined to agree to a convention unless this protection were stopped. The obvious remedy was to abolish the polariscopic scale, but our Government instead decided to continue this erroneous system, and in order to stop the bounty to our refiners agreed to make them work in bond. Thus the British taxpayer has to pay not only for the polariscopic examination of every parcel of sugar coming into the country, but also for the examination of every parcel leaving the refinery. Our statesmen have therefore even yet not learned financial wisdom in regard to sugar, as is seen

in a still more glaring way in the Brussels Convention.

Sugar Bounties a Benefit to England.

I have purposely said nothing hitherto about the continental sugar bounties which have agitated the minds of our protectionists for so many years. Originally, by accident and unintentionally, some of the continental powers gave bounties to their beet-sugar producers which to some degree, and temporarily, stimulated this industry. Incidentally these bounties had the effect of making it highly desirable that the utmost technical and chemical skill should be applied to sugar-making, instead of the primeval methods still in vogue in most of our West Indian plantations. The result was a rapid increase in the production of sugar per acre. Owing to short-sighted policy on the Continent, coupled with the necessity for raising a great revenue for militarism, continental nations were not allowed to consume their growing sugar production at home, but were prevented from doing so by crushing duties. The surplus had therefore to be exported to England, the only free market. Improved manufacture, combined with competition, brought down the price of sugar. This was really an economic change with which bounties had little to do. The result was that we were glutted with the commodity called by Mr. Lowe "the delight of youth and the solace of age." German sugar which sold at 5d. in Berlin shops was sold in

London at 1½d. per pound, and French sugar which cost 7d. in Paris was retailed at 2d. in London. The sugar bounties, so far as they, and not science, were the cause of cheap sugar, were an immense benefit to England. They were on the whole beneficial to our refiners as well, and the greatest fortune known in that trade was made entirely during the prevalence of bounties. This was because the bounties given on raw and refined sugars were practically the same, so that the German refiner was no better off than our own refiners. A few years ago, however, a change took place, and the export bounties favoured the German refiners to a fractional extent. This led to renewed and more vigorous action on the part of our refiners. They were actively assisted by the West Indians, whose industry was failing because they continued to practise methods of manufacture three hundred years old, and so obtained only 50 per cent. of the sugar in the cane. The protectionist arguments against cheap sugar were helped by the formation of a Trust or Kartel to further raise the price of sugar to the German consumer, in order that the German producer might continue to compete at low prices here. The story of the Kartel is too long to tell in the limited space at command, but it is sufficient to say that, like all these attempts at "dumping," it had really fallen by its own weight before the conclusion of the Brussels negotiations.

We have now boycotted cheap sugar, and by a

solemn treaty we have agreed to exclude it from our markets. In order to carry out this boycott we have handed over to a permanent international Commission at Brussels the control of all the intricate details of the sugar industry. England is no longer free to manage her own finances, but is under the control of a junta of foreigners. Such is Mr. Chamberlain's first triumph.

THE PAPER TRADE

By Albert Spicer

ON the surface the paper trade appears to be an industry that has greatly suffered by foreign competition. Taking only the past ten years we find that the imports of foreign paper of different sorts increased in quantity from 86,000 tons in 1892 to 194,771 tons in 1902. The increase in value in the same period was from £1,958,000 to £3,586,000. Protectionists, seizing upon these figures, exclaim that our paper manufacturers are being ruined by foreign competition. This superficial argument is even strengthened when we turn to the figures of our export trade, for whereas our exports of paper of all sorts in 1892 was 44,000 tons, in 1902 it was only 38,000 tons; and this decline in quantities was accompanied by a decline in values from £1,431,000 in 1892, to £1,121,000 in 1902. Thus on the one hand the importation of foreign paper has very greatly increased, and on the other hand the exportation of our own paper

has slightly decreased. Surely here is a case of the failure of Free Trade!

Let us look a little farther. Even if we assume for the moment that these figures tell the whole story of the British paper industry, they still do not prove the failure of Free Trade. We have to think not merely of the makers of paper, but of the users of paper. The increased importation of foreign paper, by stimulating competition, has led to an enormous increase in production and to a reduction in the price. The prices to-day for nearly all sorts of paper are, speaking broadly, less than half what they were thirty-five years ago. As a consequence there has been an enormous development in the use of paper for all purposes. The growth in the size of newspapers and the reduction in the price of books have been rendered possible by the cheapening of paper, which is the principal raw material of the newspaper proprietor and the book publisher. The cheapening of wall papers has also been a great boon to the nation as a whole, for though possibly some of the cheaper wall papers now produced may not satisfy the judgment of high-art critics, they give brightness to thousands of modest homes whose owners a generation ago would have had to be content with bare walls. The cheapness of paper has also been of solid advantage to every business house in the kingdom, by diminishing the cost of account books and other stationery. It has equally benefited

every wholesale or retail firm that uses paper for packing. In addition, the increase in the production here, together with the importation from abroad, have been of distinct benefit for all labour. Paper, though a manufactured article, is a raw material for an innumerable number of articles, all of which call for labour in their production. Cheap paper is one of the factors in the printing trade. When the duty was taken off paper in 1861, the total number of persons employed in the printing and book-binding trade in England and Wales was 46,576. In 1901 the number was 149,793.

The first effect of higher-priced papers would be a reduction in the amount of printing, and consequently a reduced demand for labour. When these considerations are taken into account we begin to realise that even were it true that our paper-makers had been injured by Free Trade, yet a balance of advantage has been reaped by the nation.

Paper-Makers not Injured.

Fortunately, however, we have ample evidence that British paper-makers have not been injured by Free Trade, but have profited by it. This evidence is furnished by the figures showing the quantity of raw materials imported for making paper. In 1892 we imported paper-making materials—namely, rags, esparto, and wood pulp—to the amount of 453,000 tons. In 1902 this amount had risen to 743,000 tons. As very little paper-making material is produced at

home, and that little is used in conjunction with imported material, these figures give a very accurate indication of the expansion of the British paper-making industry. They show that in spite of the large increase in the importations of foreign paper, and in spite of the decrease in the exportation of British paper, the material worked up in British mills increased in ten years by 64 per cent. In face of this record there does not seem much reason for complaint on the score of foreign competition.

It may be said that the number of paper-mills in the country has decreased. This is true, but it is only because small mills have been replaced by large ones. The paper-mills of the past, prettily situated on the banks of a small stream, and each employing only one machine, have for the most part disappeared. In their place has come the large paper-mill containing several machines, and so situated as to command good water, cheap coal, and good railway communication. One of these modern mills will turn out as much work as half a dozen of the old mills. The disappearance of the latter may be a matter of regret from an æsthetic and romantic point of view, but industrially their replacement by larger mills is a distinct gain. Undoubtedly the change from the old type to the new has been accompanied with hardship to individuals, but such individual hardships are an inevitable consequence of all social or industrial developments.

It may be argued, however, that British paper-makers, although they are doing a larger business than ever before, may yet be doing it at too low a range of profit, or may perhaps even be losing money. There may be cases where this is the result, but on the other hand there are many proofs that paper-makers are doing fairly well. The wills of private paper-makers, the dividends of paper-making companies, and the solid financial reputation of private concerns and limited companies engaged in paper-making, all offer abundant evidence that in spite of foreign competition the British paper trade, looked at from the manufacturer's standpoint, has not been altogether unremunerative.

Untaxed Raw Materials.

What, then, is the reason of this position? How does it happen that the British paper-maker's business increases and is profitable although he is shut out of foreign markets and simultaneously attacked in his own market by foreign rivals? What is the secret talisman which enables him to defy this unfair competition? Not only is the foreign maker protected by a heavy tariff in his favour, but his mill is often erected at or near the very spots from which we draw our raw material. He has an ample supply of cheap water power, and he is often favoured by artificially low freights. And yet the British paper-makers still hold their

own and expand their business. The sole reason is that our Free Import system provides the British manufacturer with all the materials and all the machinery he requires at rock bottom cost.

On the other hand, the foreign manufacturer has to buy a large number of the articles essential to his business at prices enhanced by the protective system which his paternal Government maintains, in order to keep out the merchants and manufacturers of other countries.

An examination of the advertisements in the trade journals that circulate among paper manufacturers, gives some insight into the enormous value of our policy of free imports to British paper-makers. The primary material of the paper-maker is wood pulp. The advertisements show that the producers of wood pulp in Scandinavia and the United States are keenly competing with those of Canada for the privilege of supplying British paper-makers with raw material. To shut out the competition of any of these enterprising producers of pulp would certainly result in raising the price of pulp, and so injure the British paper-maker in his competition with foreign makers.

Another important material is esparto grass. The best comes from Spain, lower grades come from Algeria and Tripoli. Rags come from almost every country in Europe, and the prices vary slightly according to the place of origin, in consequence of differences in quality.

Rosin, too, is a material largely used by paper-makers; and here also different qualities are obtained from different countries. It is the system of free imports that enables our manufacturers to select exactly the quality they require for their work. Paper-makers are, further, large users of soap, so that if a duty were imposed upon soap in order to benefit the soap-maker, the paper-maker would suffer. Starch is another material largely used by paper-makers, but a duty on corn involves a duty on starch, so that it is absolutely impossible to establish a system of preferential tariffs for the benefit of colonial corn-growers without injuring British paper-makers. Next we have glues and gelatines. These are made out of hides and hoofs and other animal products, but if a duty be imposed on meat in order to benefit the colonial meat producer, it must also be imposed on live cattle, and if so there will be no possibility of preventing part of the duty falling upon the hides and the hoofs, and so injuring, first the British makers of glue and gelatine, and secondly the paper-makers who use these products as raw materials. Colours of all kinds are also largely used in the paper trade. Many of them are produced in England, but others have to be obtained from abroad, either because the quality is better or the price lower.

It would be a grave injury to the British paper-maker to be deprived of the liberty he now

possesses of buying his colours where he can best obtain just what he wants. Finally, we come to the long list of chemicals and minerals used in the paper trade, where, in many cases, foreign competition enables the British paper-maker to buy at very much lower prices than would be the result if that market was closed, or reduced in value by import duties.

Some of these materials are only produced abroad, others are produced abroad as well as in England; and foreign producers show by their willingness to pay for advertisements in British trade papers how keen they are to supply our wants. They would be less keen if a tax were laid on the imports of foreign chemicals. Protectionists may argue that as the foreign producer is so keen for our market he would pay the tax himself. If so, his costs would be increased, with the result that some of the weaker foreign firms would be driven out of the trade, and the stronger firms would then be in a position to put up prices. The evil day would only be postponed. Doubtless the British alkali and bleach producer would be benefited by a duty on alkali and bleaching powder; but what right has he to ask favours from the State at the expense of the British paper-maker?

Untaxed Machinery.

In addition to these various materials which are essential to the maintenance of the industry

there is the not less important question of machinery. As the advertisements already referred to clearly show, some of the machinery used by British paper-makers is made abroad. It may be that British machine-makers can produce machinery as good or better than the foreign machines. If so, there is nothing to prevent them doing it. The British paper-maker only wants the best he can get at a satisfactory price. He has no special desire to deal with a German rather than with a British maker. All he asks is that he shall be free to go where he can get the machine that will suit him best, either in the matter of design or of quality or of price. But if British paper-makers once assented to a policy of Protection they would quickly lose this liberty. Suppose a duty were imposed on foreign paper in order to benefit British paper-makers, the engineering trade would at once demand that a corresponding duty should be imposed on foreign machinery in order to benefit British machine-makers. The advantage of the paper-maker would then entirely turn on the balance between these two duties, and it is by no means certain that the paper duty would be relatively the larger. Indeed, the contrary is the more probable. Any attempt to put a duty on foreign paper would be resisted by every newspaper in the kingdom and would be resented by every large consumer of paper. The Australian Commonwealth has been compelled by

popular opinion to leave paper, imported for newspaper and many other purposes, on the free list. Comparatively few people buy foreign machinery, and there would be much less popular resistance to a proposal to tax machinery than to a proposal to tax paper. If, then, British paper-makers were to advocate the principle of Protection in the hope of securing some advantage for themselves, it is more than probable that they would find that they were left out in the cold while other more powerful interests benefited at their expense. It may indeed safely be said that there are few industries in the country to whom the policy of free imports is so essential as the paper-making industry.

Increased Home Demand.

A point that still remains to be dealt with is the question of the decline in our exports of paper. Protectionists may ask how it happens that our exports have declined if our paper-making industry has otherwise flourished. The answer is twofold. First, American and Canadian paper-makers did hit our British paper-makers very hard in Australia a few years ago in the papers used for newspapers. America and Canada had advantages in raw material and machinery, and were not slow to utilize them. Secondly, British paper-makers, like other British manufacturers, do not sell abroad at lower prices than they can secure at home, and apart from

newspaper, during the last few years, paper-makers from America and other countries have secured a share of the paper trade in Australia which might have come here had not makers in this country been employed at better prices.

It should also be mentioned that the figures in the Blue Books for paper do not tell the whole story. Many articles largely composed of paper, such as books, magazines, illustrated papers, &c., are entered under other headings.

These facts furnish a very useful illustration of the futility of Mr. Chamberlain's preferential scheme so far as the paper trade is concerned. South Africa and Australia are the only self-governing Colonies that buy paper largely; Canada produces most of her own, is constantly increasing her outturn, and is competing successfully for Australian and South African trade. It is extremely unlikely that the newspaper proprietors in South Africa and Australia would welcome a duty on the raw material of their industry in order to add to the profits of British makers. The question, moreover, would at once arise whether the Canadian paper-makers were to share in the same preference. If not, the scheme could hardly be called inter-imperial. But if the Canadians did share, a very gross injustice would be done to the British industry. At present that industry has one solitary advantage—the advantage of being able to buy all the materials it wants, including the food

of its workpeople, in the cheapest market. The essence of Mr. Chamberlain's scheme is a tax on the food of British workpeople. That is the price that the British paper manufacturer, or his employees, would be asked to pay for such preference in South Africa and Australia as the people of those Colonies might be willing to give. But the Canadian paper manufacturer will be asked to pay no price at all. On the contrary, he may possibly under a preferential scheme be able to buy some of the materials and some of the machinery he uses a trifle cheaper than he can buy them now. His power of competing with the British manufacturer will thus be distinctly increased, and yet he is to get an imperial preference in Australian and South African markets for which British paper-makers alone would be asked to pay. To sum up, Canada alone of all our Colonies possesses immense paper-making potentialities, owing to her huge forests and water-power. South Africa and Australia are not likely ever to become great paper-making countries. Their object is to buy their paper at as low a price as possible, and they are as willing to buy from America and Canada as from the Mother Country.

Nor would the British paper industry in the long run benefit by a duty on foreign paper, even if the other trades in the country were willing for a moment to submit to such a tax upon their industries. The only way in which a duty on

foreign paper could benefit British paper-makers would be by enabling them to charge higher prices to the home consumer.

During a business experience of thirty-eight years, a rise in price on only two occasions has revealed the fact that the least rise in price tends inevitably to lessen consumption ; so that higher prices would suit the *manufacturer* at first, but not for any length of time if a lessened consumption were the result. To the *consumer* higher prices would be a distinct loss from the beginning. The hardest blow, however, would be to the *worker*, as if the reduction in quantity represented only the same percentage as the import duty imposed, the loss of employment brought about by the lessened quantity to be handled in all the processes connected with paper from its raw state to the finished article in the innumerable shapes of which paper is the chief factor, would be very severe.

Therefore, looking at the above facts, I believe it will be found that any alteration in the Fiscal Policy of this country, so far as relates to Free Imports of raw Material of paper, and of Paper itself, will be a disadvantage to every branch of the paper trade, as well as to all users of paper.

THE ALKALI INDUSTRY

By Alfred Mond

(Of Messrs. Brunner, Mond & Co.)

THE manufacture of alkalies and bleaching powder, the former of which includes the production of soda ash, soda crystals, caustic soda, and bicarbonate of soda, has long been one of the staple industries of England; in fact, although the first manufacturing process on a large scale was invented by the Frenchman Le Blanc, the industry was taken up and developed in England in advance of all other European countries. In this industry, as in the case of many others, England had an early predominance of manufacture, which was largely due to the favourable conditions obtaining as regards raw materials (which conditions still prevail, although not to the same extent as formerly), also to her greater freedom from disturbance due to war or political upheavals, and to the fact that she possessed larger resources both in the way of capital, skilled work-

men and energetic manufacturers than those of any other European country.

It is as well to emphasise this point, as it is one that must be taken very fully into consideration by any one who wishes to learn why it is that English industries were developed on so large a scale whilst those on the Continent were still in their infancy. These advantages have given England for a long period a supremacy in manufacture which still exists, though the improving conditions, educational, financial, and political, on the Continent of Europe, are bound in time to considerably affect it. In comparing the development of any of our industries under Free Trade with others under the *régime* of Protection, the factors in industrial progress, which are entirely independent of the fiscal policy of the different countries, have to be taken into account if we are to avoid arriving at fallacious conclusions. The rise or decline of industries in any particular country is not due purely to the fiscal policy of the country in question. We have also to take into consideration such important factors as the accumulation of capital, the existence of skilled technical managers, and of an industrial population, for these are fundamental questions in the competition between manufacturers.

It is not altogether an easy matter to collect any statistics on the development of the English alkali trade of an absolutely reliable nature, and although the few figures in this article have been compiled

with as much accuracy as possible, they must, particularly as regards the earlier and historic portion, be considered to some extent as estimates only.

In taking the production of alkalies in England, commencing with the year 1850, the following table gives the percentage increase or decrease of production up to the year 1902 :—

	Percentage Increase or Decrease.
1850 to 1863	Increase 90·5 per cent.
1864 to 1868	„ 10·0 „
1869 to 1873	„ 13·6 „
1874 to 1878	„ 20·0 „
1879 to 1883	„ 43·3 „
1884 to 1888	„ 4·6 „
1889 to 1893	„ 10·3 „
1894 to 1898	Decrease 6·1 „
1902	„ 7·6 „

These figures show a very large increase indeed in the period 1850 to 1863, the kind of increase which one would naturally expect in the earlier stages of an industry, but which from the very nature of things could not be expected to continue on the same scale as the consumption became more normal. Still, there is a steady increase up to the period 1894 to 1898, and the period of 1898 to 1902 shows a slight decrease in production, though not to any alarming extent; in fact, on comparing the figures of 1850 with the figures of 1902, one finds that the total production has quadrupled during that period.

The American Trade.

The explanation of the decrease before mentioned

is recognised by any one connected with the trade as due to the very large diminution of exports of English alkalies to America. This result, due partly to the increased duties on alkalies imposed in 1897, but mainly to the rapid development of the manufacture of alkalies in America, was undoubtedly one of the severest blows the English alkali trade received during the many years of its existence. There can be no doubt that the increase of the then existing duty of 1894 to a higher figure in 1897 had an undoubted effect in diminishing the exportation of English alkalies to the United States, but long before that period alkalies were being manufactured in America by the ammonia-soda process in increasing quantity, and the development of this industry, in a country which is in every respect favourably situated for the production of alkalies, was bound in time to largely affect the demand for alkali from this country. The same result to some extent has been brought about in European countries such as France, Belgium, Germany, Austria, and Russia, which is an illustration of the fact that, given suitable conditions, industrial countries of modern times naturally develop their own resources, and supply themselves with products which they had before almost exclusively imported from this country.

To any one who gave consideration to the matter it must have been obvious that this development would take place. In fact, it would have been im-

possible for a small country with a small population like England to supply the industrial demands of the modern civilised world entirely by itself. Yet many people seem to look upon the development of industries in other countries as all loss to England, apparently on the hypothesis that England could have gone on supplying the whole of the manufactured goods required by the world if other countries had not taken to manufacturing themselves. This too common hypothesis, that every other country's industrial gain is necessarily our loss, is disproved by the fact that in spite of the very large development of the alkali industry on the Continent, particularly in Germany, and in spite of the enormous dimensions to which the industry has attained in the United States of America, the English production of alkali shows, if taken over a considerable period, not a diminution, but an increase.

It has become too common a habit when examining the history of our industries to gauge them exclusively by the standard of the gross returns of our exports to foreign markets ; indeed, most of the figures which are being hurled about by the controversialists on the fiscal question turn on the export and import statistics of this country, as published in the Board of Trade returns. These are naturally easier to deal with than the statistics of the home consumption which are more difficult to ascertain, but in most industries are of much greater

importance. It is therefore of interest to show the percentage increase of the consumption of alkalies in the United Kingdom, and for this purpose the average figures in consecutive periods of five years, beginning with the year 1881, which is the earliest date for which any reliable figures could be obtained are inserted :—

	Percentage increase.
1881 to 1885	24·2 per cent.
1886 to 1890	31·2 „
1891 to 1895	4·7 „
1895 to 1900	19·8 „

These figures, showing an increase of practically 100 per cent. in the consumption of alkalies in our home markets, are an eloquent proof of the increased capacity of the United Kingdom to consume products which are almost of primary importance.

The Bleaching Industry.

With regard to the production of bleaching powder, this product, which is always classed with alkalies, and is manufactured in conjunction with them as far as the Leblanc process and electrolysis is concerned, is of relatively much smaller importance, as the total tonnage produced is much less than that of the alkalies we have already dealt with. The bleaching industry has been very seriously affected by the revolution caused in the paper trade by the introduction of wood pulp, and more especially wood pulp bleached

with sulphurous acid, which has very largely diminished the consumption of bleaching powder in its most important outlet, viz., paper-making. As a consequence of this change in the requirements of the paper industry, the consumption of bleaching powder has remained practically constant since 1881. The following figures show the ups and downs which have taken place in the United Kingdom's consumption since 1881 :—

	Percentage Increase or Decrease.
1881 to 1885	Decrease 2·3 per cent.
1886 to 1890	Increase 19·3 „
1891 to 1895	Decrease 29·2 „
1896 to 1900	Increase 32·8 „

The manufacture of bleaching powder by the old Leblanc process has also been very seriously affected by the newer methods of decomposition of alkaline chlorides by electrolysis. This process found its largest development in Germany, and English manufacturers were somewhat slow to avail themselves of its benefits. As a natural consequence an appreciable quantity of German bleaching powder was imported even into the English home market. This is practically the only case, under this head, in which the English home market is suffering to any extent from foreign competition. England possesses great natural facilities in the supply of cheap salt and fuel; she possesses efficient labour, and the development of gas producers and gas engines

is yielding still cheaper power. There appears no reason why the British manufacturer, employing the most modern methods, should not be able perfectly well to hold his own against German or other manufacturers of electrolytic bleaching powder, not only in the home market, but even in neutral markets.

Consumed by the Million.

The chief consumption of soda ash and caustic soda is in the manufacture of such articles of domestic consumption as soap, paper, and glass, and in washing processes in the textile industries. Bicarbonate of soda finds an outlet in the manufacture of aerated waters, drugs, and many other domestic purposes, such as for baking powder, &c. Soda crystals find their general use for washing purposes in the household and in laundries. From this it will be seen that the alkalies form the basis of commodities that are consumed by the million. Consequently the increase of the consumption of alkalies per head of the population is no bad index of the nation's general prosperity. Judged by this standard, England is still ahead of any other country, our cousins in the United States not excepted.

If it, therefore, be asked in what way our Free Trade policy beneficially affects the English alkali trade, the reply can be readily given that so far as Free Trade has enhanced the general prosperity of

the country and raised the purchasing power of the mass of the population it has benefited the alkali trade in the same way as every manufacture is benefited by the prosperity of its customers. Any alteration in our fiscal system which would restrict the available balance of purchasing power now devoted to the consumption of alkalies, or of articles manufactured therefrom for domestic use, would react on the volume of consumption, and therefore diminish the most important market of all, viz., the home market.

If it be asked in what way the British consumer, who is after all the most important person, has benefited as regards the alkali trade by our policy of free imports, the reply would be that he has been able to purchase, whether as a manufacturer of products in which alkalies are necessary and important ingredients, or as domestic consumer, alkalies at natural prices, and at prices taken on the whole considerably below those at which consumers in protected countries have been able to obtain them.

British *v.* Foreign Wages.

If it be asked what is the position of the British workman in the alkali trade conducted under a Free Trade policy instead of a protected one, the figures published by Sir John Brunner in his letter to the *Times* of July 14, 1903, based on actual comparative data, show that—

"The average daily wage paid to the workmen employed in the alkali trade is—

In Germany	78	per cent.	of the	English rate.
In France	77	,,	,,	,,
In Austria	56	,,	,,	,,
In Hungary	43	,,	,,	,,

Sir John Brunner adds—

"To earn these wages in Germany, in France, in Austria, and in Hungary, the men have to work twelve hours a day, whilst in England the men work only eight hours a day. We give our men a week's holiday annually without stoppage of pay. The German, therefore, has to work fifty-two weeks twelve hours a day to get 78 per cent. of the wage of the Englishman, working fifty-one weeks eight hours a day; and the others get less in the proportion shown."

These figures prove conclusively that the British workman does not receive any less wages than his fellow-workman in protected countries on the Continent, but actually works shorter hours with better wages, and, thanks to the greater purchasing power of the money, enjoys a larger measure of comfort in his daily existence than his less favoured though protected continental colleague.

It is impossible in the space allotted to enter into as exhaustive a treatment of the subject in its relation to the fiscal policy as might be thought desirable, but the broad facts above outlined show with sufficient clearness that neither the manufacturer nor

the workman, nor the consumer in the alkali trade has any reason to look forward to any improvement in his position by a return to a protective system. The imposition of taxes on food would certainly not improve the position of any one of the three classes. Such taxes would compel the working population to divert more of their wages to the purchase of food, and thus would lead to a reduction in the consumption of alkalies, to the injury of manufacturer and workman as well as consumer.

The imposition of protective duties on so-called manufactured articles, although it might not seriously affect the alkali manufacturer directly, as he is not a considerable purchaser of machinery manufactured outside the country, might still handicap him in those specialities which he obtains most advantageously from abroad. A protective tariff would also, by causing a general rise in price of commodities, make it more difficult for the alkali manufacturer to fight against foreign competition in neutral markets, and even in the home trade.

Nothing to Gain by Protection.

Nor has preferential treatment any charm for the alkali manufacturer, who is already in possession of the colonial markets of our self-governing Colonies to an almost exclusive extent, and although he, like others, is naturally not unwilling to obtain preferential terms over his competitors in such markets, and consequently better prices, he would certainly

not benefit if such preferential treatment meant the imposition in his own country either of taxes on food or on materials of such importance as timber and similar products, of which he is a large consumer.

The reduction of the heavy tariffs existing against him in foreign countries would probably be of some benefit to the English manufacturer in enabling him to compete again in markets which he now finds unremunerative and difficult of entry. It must, however, be remembered that the home manufacture of these products in these countries would, where the cost of production is fairly equal to his own, clearly not allow the English manufacturer to obtain an advantage equal to that which is commonly expected from the lowering of tariffs which now exist against the English products. The protected manufacturer, in so far as he is not prevented by internal competition, certainly gets the larger part of his tariff duty out of his customer, and thus makes an additional profit beyond his legitimate commercial profit. If the tariff were abolished, the protected manufacturer would be bound to largely reduce his prices, but he might still be able to produce at a price which would enable him to retain his home market against the competition of the British manufacturer.

In conclusion, it would appear that the English manufacturer of alkalies has little to gain and a considerable amount to lose from experiments on

our fiscal system. Under the existing system his trade has certainly developed to a larger extent than the founders of the industry would ever have anticipated, and this extension has been coupled with a large reduction in prices to the consumer from the earlier days of the industry to the present time, combined with higher wages and better conditions both as regards the standard of comfort and hours of labour of the workmen employed in the industry. There is a very well-known proverb that "it is a good thing to leave well alone," and the alkali manufacturers will not be the only ones among English industrials who will do wisely to accept the wisdom of generations gone before.

THE SOAP INDUSTRY

By Councillor A. H. Scott

THE soap manufacturing industry of the United Kingdom has nothing to hope for, but much to fear from, any system of preferential tariffs. Countries which already possess the so-called advantages of Protection, although favoured by having the raw materials near to hand, have so far failed to successfully compete in the markets of the world with the British manufacturer.

There is no doubt that the American soap manufacturers are as well equipped and have men quite as capable as our own at the head of their trade. And besides this they produce in their own country many raw materials required for the manufacture of modern soaps which British makers have to purchase from them. But although they have tried for years to capture the world's trade in soap, they have, with the exception of a few isolated instances, where heavy advertising has secured them problematical successes in Europe, so far only

established a small *regular* export trade in ordinary soaps in the West Indies, whilst all other markets are practically supplied with soap made in Free Trade England.

Why should this be the case if the American soap trade were not "*shackled in competition*" with England by the tariff?

The British soap trade was not always what it has become to-day under Free Trade. Formerly an excise duty was levied on soap manufactured in the United Kingdom (with the exception of Ireland) of 1½d. per lb. on hard soaps and 1d. per lb. on soft soaps, with 5 per cent. additional in each case, but this was abolished by Act 16 and 17 Vict., cap. 39, as from July 5, 1853.

The quantities of soap manufactured and the amounts collected during the three years preceding the abolition of the duty were as follows :—

SOAP CHARGED WITH EXCISE DUTY, 1850–52.

	Hard Soap. Cwt.	Duty collected.
1850	1,652,796	£1,214,805
1851	1,662,255	1,221,757
1852	1,814,284	1,333,498
	Soft Soap. Cwt.	Duty Collected.
1850	172,300	£84,427
1851	169,882	83,242
1852	186,248	91,261

The Board of Trade returns during the same period do not show the *export* of soap separately,

but include candles as well. It is safe to assume that at least two-fifths of the quantities exported consisted of candles at that time. From the date of the abolition of the excise duty the returns are given for soap only, whilst up to the end of 1852 soap and candles are recorded together. The following set of figures represent the Board of Trade returns compiled in periods of ten years each, and show quantities and values exported from 1833 to 1902 inclusive, the figures up to 1852 being for soap and candles combined :—

EXPORTS OF SOAP AND CANDLES, 1833–1852.

	Cwt.	Value.
1833–42	1,672,117	£3,377,168
1843–52	1,448,434	2,710,042

EXPORTS OF SOAP ONLY, 1853–1902.

	Cwt.	£
1853–62	1,874,467	2,482,349
1863–72	1,831,157	2,435,770
1873–82	3,082,265	3,644,367
1883–92	4,704,554	5,046,486
1893–1902	7,977,595	8,366,259

On the face of them these figures appear as if the weights and the cash values were disproportionate. But it must be remembered that in 1853 tallow averaged from £42 to £47 per ton, whilst in recent years the value came down to average from £20 to £30 per ton, and in 1897 touched the lowest price, viz., below £20 per ton. Other raw materials used in the manufacture of soap also became cheaper

in proportion, and as a consequence the sale price of soap fell.

Taking the Board of Trade returns for the year 1852, we find that 1,814,284 cwt. of hard soap was manufactured in the United Kingdom, out of which 65,000 cwt. was exported, leaving for home consumption 1,750,284 cwt. which was consumed by an aggregate population of, roughly speaking, 28,000,000 people.

Assuming for the sake of comparison that no greater consumption *per capita* has since taken place, the manufacture of soap for home consumption for the last three census years should stand as follows :—

	Population.	Quantity.
1883	36,000,000	2,257,560 cwt.
1890	38,000,000	2,413,380 „
1902	42,000,000	2,643,820 „

Or taking the year 1902, the soap manufactured for home consumption and export in this *one year only* shows :—

Home consumption	2,643,820 cwt.
Export	1,048,778 „
Total	3,692,598 „

which is equal to the exports of soap from 1833 to 1855, including candles, namely, *for a period of twenty years.*

Surely these figures speak for themselves!

The amount of soap imported into the United

Kingdom is only a small percentage of the total amount consumed. During 1900, the last year for which Board of Trade returns are completed for soap and soap powders, the amount imported was :—

	Cwt.	£
From Holland	4,271	9,421
„ Belgium...	1,310	3,756
„ France	23,531	27,765
„ Italy	21,012	20,843
„ U.S.A.	135,077	176,270
„ Other	5,493	5,716
Total from Foreign Countries	190,694	243,771
Total from British Possessions	539	574
Total	191,233	£244,345

These figures do not include cheaply made transparent toilet soaps in which cheap alcohol is one of the main ingredients. But the value of this particular class of soap is too insignificant to materially affect the above figures.

For the same year the soap manufactured in the United Kingdom for home consumption can be safely estimated at 2,600,000 cwt., and the Board of Trade returns show exports of 874,214 cwt., making a total of 3,474,214 cwt.

Hence the imports during 1900 of 191,233 cwt. are only equal to 7⅓ per cent. of the soap manufactured in the United Kingdom, or to 22 per cent. of the soap exported from the United Kingdom.

Raw Materials of the Industry.

The sources from which the materials for soap-making in the United Kingdom are drawn are the countries which produce and export either one or more of the following materials :—

1. Tallow.
2. Palm oil.
3. Cotton seed or cotton seed oil.
4. Cocoanut oil or palm kernels or kernel oil.
5. Resin.

There are numbers of other fats and oils (not hydro-carbons) which are now used for soap-making, but the above range of materials still remains the main supply for soap-making.

1. Tallow is supplied to this country by the United States, the Argentine, Australia, and New Zealand. Roughly, half the supply is from foreign countries and half from British possessions.

2. Palm oil, the product from the fruit of *Avoira elæis* and *Elæis guianensis*, is exclusively an export from the West Coast and so-called South Coast of Africa, and as such is outside any fiscal consideration.

3. Cotton seed, as well as some of the cotton seed oil, is a product of the United States of America. The larger quantity of cotton seed crushed in the United Kingdom at the present time, however, comes from Egypt, and some small quantity also comes from India

4. Cocoanut oil is used, roughly speaking, in three qualities, namely, Cochin oil, Ceylon oil and copra oil. The first two speak for themselves as regards their origin. Copra oil is manufactured in the United Kingdom, but quantities are imported from France (Marseilles), and Germany (Hamburg). The same may be stated with regard to palm kernel oil. Although this oil is produced from the imported kernels to a certain extent in the United Kingdom, a large quantity is imported from the two ports mentioned above.

5. Resin, a product from the natural or induced exudation of plants of the pine family, is not produced or manufactured in England, but is imported from the United States or France into the United Kingdom. There are smaller supplies from other European countries, but they can scarcely be taken into account.

The materials for soap-making so far dealt with have not, as shown, affected our trade with British Colonies.

The annexed returns show that—no matter through what cause—the supply of Australian tallow has been decreasing of recent years, while the supply of South American, of equally suitable quality, is an increasing one. The price is from £2 to £3 less per ton. Argentina is willing to supply us at a lower price and our Australian Colonies are not satisfied with £2 to £3 per ton more, because they live in a country affected by droughts.

IMPORTS OF TALLOW AND STEARINE INTO THE UNITED KINGDOM.

Year.	From U.S.A.	From Argentina.	From Australasia.
	Cwt.	Cwt.	Cwt.
1893... ...	312,000	52,000	1,049,000
1894... ...	182,000	69,000	1,425,000
1895... ...	104,000	103,000	1,804,000
1896... ...	411,000	130,000	1,309,000
1897... ...	272,000	108,000	1,394,000
1898... ...	572,000	164,000	1,060,000
1899... ...	557,000	127,000	1,164,000
1900... ...	571,000	178,000	1,216,000
1901... ...	404,000	204,000	985,000
1902... ...	182,000	437,000	862,000

The whole question of materials resolves itself into the fact that *for tallow* we are better served by outsiders than by our Colonies. *For palm and other oils and resin* we can only be unfavourably affected by any protective tariff. Any interference with the free imports of raw materials would seriously handicap the soap-manufacturing industry of this country, and if the duty were high, would probably destroy the export trade.

THE BOOT AND SHOE TRADE

WITH A NOTE ON THE LEATHER TRADE

By John T. Day

(*Editor of the "Shoe and Leather Record"*)

IN reviewing the progress of the boot and shoe industry under Free Trade it is only necessary to sketch very briefly the history of the trade prior to the complete introduction of the factory system. In 1846 the industry was in much the same position as the better class tailoring trade is in to-day. People were measured for their boots, which were made by hand, by or under the direction of the bootmaker who took the measure. There were a few so-called factories in Stafford and Northampton, and a few more scattered about the country. But these were not factories in the modern sense of the term. They were shops where leather was cut up by hand and given out to bootmakers working in their own homes, to make up by hand. The whole family was

usually employed, the women and girls closing the uppers, and the men performing the harder and more skilful work of joining the uppers to the soles and heels.

The introduction of the sewing-machine modified this system. The manufacturers bought sewing-machines, and the women were taken into the factories to make the uppers, but the main work was still a home industry so far as the men were concerned.

In the early sixties riveted boots were introduced. These were made on heavy cast-iron lasts, which could not be conveniently carried to and from the workmen's homes, so factory accommodation was enlarged, and with some difficulty sufficient men were induced to leave their home workshops and enter the factories. Almost at the same time a sewing-machine was invented which would sew on the soles of boots, and this was the beginning of the revolution of the industry. More men had to go into the factories, but a great deal of the labour was still performed at home. The work known as the "finishing" of both machine-sewn and riveted work remained a home industry, and the old hand-sewn system of bootmaking was also continued—and is also continued so far as it has survived—as a home employment.

The Introduction of Machinery.

The introduction of the sole-sewing machine not

only helped largely to transform a home industry into a subdivided factory industry, but it had other important consequences. (It was an American machine known in the United States as the McKay Sole-Sewer, and in this country as the Blake.) While the patents existed no machines were ever sold, but thousands of them were leased on both sides of the Atlantic under a system whereby the boot manufacturers put down a premium of about £100 (the machine cost not more than £30 to build) and agreed to pay in addition a royalty equal to about a penny a pair for every pair of boots sewn upon it.

The profits to those exploiting the patent were enormous, amounting literally to many millions of dollars, most of which went to America. The result was that every Yankee inventor began to turn his attention to shoe machinery as the easiest way to fame and fortune. And to this day, in America universally, and in the United Kingdom partially, the royalty system has been maintained in connection with shoe machinery.

The supply of machinery is a practical monopoly in America, where the United Shoe Machinery Company of Boston levy royalties estimated to average five cents a pair on every pair of boots and shoes made in the United States, their royalty income amounting, it is said, to a million dollars a month.

Now this development of shoe machinery in

America had nothing to do with either Protection or Free Trade, but it has had a considerable influence upon the industry in this country. The McKay or Blake machine, which made the money which has attracted so many inventors' brains to the shoe trade, was an invention which sprang out of the necessities of the American Civil War. As the men of the North were drafted into the army skilled labour became dear, and boots and shoes, articles of prime necessity in war time, could not be made in the old way in sufficient quantities. The McKay machine solved the difficulty by making a boot in an entirely new and very simple way, which might never have been discovered but for the pressure of the war, but which, once discovered, became of enormous permanent value. The thousands of inventions which have since been given to the trade are the outcome of the inventive talent kindled by the fire of the first great success, and fed in large measure by the money which it brought in. For the owners of the McKay patent were as active as their imitators in casting about for new machinery to replace the old as their patents expired. And the American manufacturer never seemed to object to the royalty demanded for the use of a new machine so long as it saved enough labour to pay the royalty and show him a profit.

High Wages and Low Cost.

But on the two sides of the Atlantic very different

conditions prevailed. In America weekly wages were quite double those ruling in the English shoe trade. Many machines which were profitable to use when they displaced labour at a shilling an hour were hardly worth investing in when hand labour cost but sixpence. And this was about the relative position in the two countries at the time the revolution of manufacturing methods was in its most active phase.

Further, the British boot manufacturer has a rooted prejudice against paying royalties. He prefers to buy his machinery outright. Sometimes the American owners refused to sell. At other times they asked so big a price that few could afford to scrap their old plant and lay down new. In a brief sketch it is impossible to enter very far into detail, though much of it would be both interesting and instructive. It is enough to say that the play of circumstances brought it to pass that by 1890, or perhaps a little earlier, the factories of the Eastern States were so much better equipped than ours that the American boot manufacturer had the British market at his mercy.

But he did not know it.

Until about 1894 (so far as the shoe trade is concerned) the American manufacturer held very strongly to the view that he was only able to keep his domestic market to himself by maintaining a high tariff. When it was imposed he was told that it was for the purpose of keeping out the products

of "the pauper labour of Europe." He was quite curiously unaware that in the course of about thirty years he had so improved his methods of manufacture that his productive labour was costing him (in some cases) less per dozen by 50 per cent. than it was costing the British shoe manufacturer for the same work. And yet the American boot operative was earning three pounds a week against thirty shillings for a similar man in Leicester or Northampton. And in the case of female labour the disparity was even more marked.

I give these figures broadly as the result of a most careful personal investigation which I made in 1891, when I visited the United States for the express purpose of investigating labour costings in American shoe factories. The whole of the details were published at the time, and, I hope, helped forward the much-needed work of shoe-factory reorganisation in this country. I may say that the result of the investigation came to me as a great surprise. It seemed impossible that such high weekly wages should accord with such low piece-work costings. I had heard the stories of the agents sent over here to sell or lease American machinery, but I thought them exaggerated. Finally I decided to examine the facts on the spot, with the result stated, and I now repeat with all seriousness that thirteen years ago the American shoe manufacturer had the British manufacturer at his mercy and did not know it.

The Trade Union Attitude.

To-day the opportunity has passed, for there are many factories in England as well equipped as any in America, and though trade union tyranny prevents the machinery being run to its full capacity, the chief losers are the men themselves. Their weekly earnings are less than they need be, but most smart manufacturers have been, by the aid of machinery, able to reduce the labour cost per dozen to somewhere about the American level. The men seem to think that if they did more they would get no more pay—which is a poor tribute to the power of their union. They also appear to adopt an altruistic attitude towards each other, one man fearing to do too much lest he should either rob his fellow-workman of employment or set him an inconvenient pace.

No one objects to working men doing all they can to improve their wages, but a man who deliberately does less than a fair day's work is injuring himself and injuring the whole community as well. If the policy of shirking work were really beneficial to the working classes, then no workman ought to do any work at all.

Here it may be convenient to explain that at the time of which I am writing (1891) productive wages in an English shoe factory would average about 33½ per cent. on the wholesale selling price of such goods as were then in demand.

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Here it may be convenient to explain that at the time of which I am writing (1891) productive wages in an English shoe factory would average about 33⅓ per cent. on the wholesale selling price of such goods as were then in demand.

A popular gentleman's boot was sold at about 8s., and a ladies' at 6s. (factory prices). This would mean that about 2s. 8d. and 2s. respectively would be distributed in the productive wages of manufacture. I have spoken of extreme cases in America where I found a saving of 50 per cent. in wages. This was in lower grade goods than are the subject of the present illustration. The productive wages paid in the best American factories on such boots as I have instanced were at the time of my investigations about 1s. 9d. and 1s. 3d. respectively. This meant that the American shoe manufacturer had an advantage over his possible English competitor of 11d. per pair in one case and 9d. in the other. This would have been more than enough to enable him to swamp the market had he addressed himself energetically to the task.

Tariffs and Inefficiency.

Surplus stocks of boots and shoes cannot, however, be easily dumped out of one market into another. The styles and fittings that would suit New York would not suit London, and what would suit London would not suit Glasgow. The width of the average foot in proportion to its length varies in different countries and even in different parts of the same country. A comfortable fit being the essential thing, all orders are specially manufactured for the market for which they are intended. Boot manufacturers, therefore, are seldom the victims of

dumping except at the hands of a bankrupt fellow-countryman. Still there was nothing to prevent the American shoe manufacturer copying our lasts and styles (which has since been done to a limited extent) and utilising his cheap labour (as measured in productive cost) for the purpose of underselling the British shoe manufacturer in his own market. For the latter did not have the protection of a tariff behind which he could shelter his badly-equipped factory and his lazy workmen.

Supposing we had had a tariff of, say a shilling a pair on American boots and shoes, what would have happened in the circumstances I have named? Obviously neither manufacturer nor workman would have troubled to bestir himself to make the much-needed changes that were necessary. We should therefore have been protecting incompetence. Under Free Trade the British industry had to pull itself together, and in doing so it has not only benefited itself, but it has benefited the entire community. And incidentally it has been able to increase its export trade, particularly during the past three years, when the work of reorganising the factories began to have its natural effect. To be sure we have suffered some loss of trade by the American invasion which was attempted so soon as our friends on the other side realised the opening which our years of lethargy had made for their products. But as the following figures show, our imports are trivial in comparison with our home

production, and are much smaller than our exports. And we shall get the trade back again. Meanwhile the imports acted as an object-lesson to our manufacturers and educated them more than anything else could have done to the needs of the situation. I believe the lesson was cheap at the price paid for it.

BOOTS AND SHOES.

Nine months ended September,	Imports. £	Exports. £
1901	686,000	1,136,000
1902	626,000	1,276,000
1903	677,000	1,427,000

The imports in the above table are calculated after deducting the re-exports, and consequently represent our home consumption of foreign-made boots and shoes. A little over half of these are American, the rest being from France, Switzerland, and Austria, with each of which countries we do a limited trade, which has been going on without much fluctuation for many years. The American imports did not commence in earnest until 1895. They grew rapidly until the period covered by the table given, when they seemed to reach the stop-point. Quite half of the American boots and shoes now sold in this market are retailed by the manufacturers direct to the public. They took the shops when it seemed easy to sell American goods in England, and as it would involve considerable loss to close them they may remain open for some time

yet, but under existing conditions the withdrawal of American competition in the shoe trade of the United Kingdom is only a question of time. Already many of the American agents have returned home and have given up the attempt to do an ordinary wholesale business. And at least one has abandoned his American agencies and is now selling English goods.

THE HOME MARKET.

To see the figures of our imports and exports in their proper perspective it is well to remember that we have a population of 41,000,000 of people in the United Kingdom, and they nearly all wear shoes of sorts. If we put the annual outlay per head of the population on footwear at £1 we shall not be far out. This estimate means that our home consumption of boots and shoes amounts to the enormous value of £41,000,000 per annum. Nearly all this great trade is kept at home, the proportion of it accounted for by imports being inconsiderable. In the boot and shoe industry, as in many others, the part played by our over-sea trade, either inwards or outwards, is so small that it does not justify the pother made about it. The public mind, however, seems to be hypnotised by the contemplation of the foreign trade of our own and other countries and overlooks the much larger and more profitable business at our own doors.

I have already written as to the average cost of

productive labour in the modern manufacture of boots and shoes, and shown how it has been reduced by the adoption of improved methods forced upon us by most salutary competition. It may be worth glancing further at the benefit which the public has thus derived from the reorganisation of British boot factories.

A recent estimate issued on the authority of the Federation of Boot Manufacturers Associations places the annual consumption of boots and shoes at 100,000,000 pairs. This is probably within the mark. I estimate that the new machinery and improved organisation adopted by British boot manufacturers within the past ten years have enabled them to effect a saving averaging quite sixpence per pair. The whole of this saving has had to be given to the public, because the re-organisation of the factories has expanded their productive capacity and induced a very active state of competition. Indeed, at the present moment the trade is paying the penalty of its previous lethargy, and is suffering from a sharp attack of over-production. The changes came about so rapidly that the market has been glutted and is likely to remain so until the normal growth of demand has overtaken the increased capacity for supply. In such circumstances it has been impossible for manufacturers to keep for themselves any of the advantages derived from their new machinery. It follows, therefore, that the public has reaped a benefit now equal to about £2,500,000

a year for improvements in manufacture which would not have been adopted for many years under a protective system.

Competition and Efficiency.

But let me hasten to add that little, if any, of this benefit has been conferred in the shape of reduced prices. It has mainly taken the form of improvements in the article produced. For example, ten years ago the great middle-class trade was furnished with a boot sewn on the Blake machine to which allusion has already been made. To-day the same class of trade is supplied with what is known as Goodyear or machine-welted boots at approximately the same price. This welted boot is made precisely on the same principle as the old-fashioned hand-sewn boot of thirty years ago, and which may still be obtained of a few fashionable West-end boot-makers by people who can afford to pay the price it commands. Its exact equivalent made by machinery is now within the reach of all, and it has largely supplanted what is known as the ordinary machine-sewn boot. In many other ways too, improvements have been effected in the finish and embellishment of the modern factory-made boot, which is also of better design and fit than its counterpart of only ten years ago. All these advantages have been given to the public without any extra charge, and it has been possible to give them because of the adoption of the American

system of manufacture, which in turn was the outcome of direct American competition in the boot market. This competition would have been shut out by even a moderate tariff.

One further observation is worth making in this connection. The workman has not suffered, by the alteration of methods and the reduction of cost of production I have described, any diminution either of his individual earnings or in the total amount paid in wages. Individual earnings are better, and the money paid in wages has, if anything, increased owing to the much greater elaboration of detail and the substitution of the welted boot for the old machine-sewn article. When manufacturers used to calculate that productive wages should average one-third of the factory selling price they were figuring on a boot of simple construction. Such a boot to-day need not involve for productive wages more than 20 per cent. of the factory selling price. But it is not largely made. Its place has been taken by a more highly finished and better article of a similar kind, or by a boot made by the somewhat complicated welted process. It thus remains that the old calculation of 33⅓ per cent. for productive wages is generally adhered to by manufacturers. There has been some hardship experienced among the older men unable to learn how to operate the new machines. Younger men have had to be drafted into the factories and considerable displacement of labour has been inevi-

table. But this was the price that had to be paid. Regarded broadly, the position of the workman has been improved by the reorganisation of the factories. The most serious drawback has been that in filling their factories with new machinery manufacturers have been compelled to increase their trade in order to get the best results from the new appliances. This had led to an expansion of productive capacity which will presently find its proper level by the natural operation of the laws of supply and demand.

NOTE ON THE LEATHER TRADE

The shoe and leather industries are so interwoven that this chapter would be incomplete did it not take note of the great changes which have taken place in the leather trade during the period under review.

When the Corn Laws were repealed tanning was a scattered industry. Every important town and many large villages, especially if they were near to oak timber and a stream, boasted a tanyard. These yards were in the hands of men who had been born in the business, as their fathers had been before them. Many of them ranked with the country gentry, and they not infrequently had considerable landed interests. Tanning was an eminently respectable trade, as it implied the

possession of either large capital or good credit, on account of the length of time taken to turn the hides into leather. Moreover, it was a leisurely occupation which gave ample time for hunting, fishing, shooting, and country sports. But it had no attraction for the captains of industry who were then emerging into the position of prominence and usefulness they now enjoy.

One other fact it is well to remember in relation to the tanning trade. Its basis rests upon the utilisation of a by-product. Hides and skins (except valuable furs) are not taken from the animal until the animal is wanted for food. The tanner is therefore in a position of comparative helplessness as regards the supply of his chief raw material. The local tanner had to rely upon local hides, and when altered conditions diverted his natural supply he was not the sort of man to follow it. He just closed the yard and betook himself to farming or some other congenial pursuit. Many tanners, of course, obtained supplies of hides from London factors to whom they consigned the finished leather for sale in due season. But the factor made the big money while the tanner was satisfied with small profits coupled with the delights of a country life.

Just one other fact worth noting is somewhat curious. In a fairly extensive experience I have neither met nor heard of a successful tanner whose father before him was not also a tanner. It seems

to be a sort of mystery business, and even under modern conditions the hereditary tanner has a strange advantage which I merely put on record without attempting to explain.

A trade with such a history and such associations was naturally not equipped as to its *personnel* to grapple quickly and successfully with the changes which have taken place during the past sixty years, both as regards the source of supply of raw materials and the markets in which the finished products could be sold. In short, British tanners have been for years remarkable for sleepiness, though some of them have remained fairly wide awake throughout and the rest show satisfactory signs of awakening. Meanwhile they have undoubtedly suffered more from the effects of foreign competition than their allies, the boot manufacturers.

One potent reason which helps to account for the inroads made by American and continental leather producers in the English leather market is the fact that the distributing trade was until quite recent years almost in the hands of merchants. The tanner did not sell direct to the boot manufacturer. He was not in touch with the consumer, and the merchant bought leather wherever it was offered, and was usually very active in finding bargains which happened to lie about in the markets of the world to resell in competition with the product of the British tanner. And it is almost entirely due to the efforts of the middleman that

so much foreign leather now finds a market in this country. He has a special interest in pushing foreign leather in the many cases where he can obtain an exclusive agency for its sale. The boot manufacturer can readily pass by the merchant and deal with an English tanner direct. It is more difficult when the leather is imported from an unknown or "tied-up" source, so the merchant prefers to push the foreign article.

Again, the English leather producer has been until quite recent years exceedingly conservative in his methods of tanning. His art was ancient, and he thought it could not be improved upon. Happily all this prejudice is breaking up. The pressure of foreign competition has at last made itself felt and the English tanner and leather manufacturer (the terms have a slightly different technical meaning) is waking up, and will, I doubt not, assert himself as the English boot manufacturer has done. The tanner is, as a rule, a richer man than the manufacturer, and so it took more pressure to stir him into action. The mere threat of effective American competition in the shoe trade brought about a veritable revolution. The English tanner is estimated to have lost about a third of his business before he woke up.

Could he have slumbered peacefully on the sunny side of a tariff wall he would have been asleep nów.

FLOUR MILLING UNDER FREE TRADE

By Andrew Law

(Of Crawford & Law, Glasgow)

ROUND the farm and the mill poetry and sentiment have revolved during so many ages that the task of considering them in their commonplace commercial aspect is a somewhat thankless one. Yet when the poetry and sentiment are evaporated, we see left two closely related and mutually dependent industries subject to the ordinary commercial conditions and limitations which surround other industries. The development of the second of these industries—the milling industry—since the repeal of the Corn Laws will be the better understood after a few observations on farming during the same period.

Farming is a manufacture and the farmer is a manufacturer, and his industry has been affected by the same causes which have affected all other

industries. Just as elaborate spinning and weaving machinery have superseded the spinning-wheel and the handloom and so added immeasurably to the productive capacity of the individual factory operative, so have the application of scientific methods, and especially modern tools and machinery, to agriculture increased the productive capacity of the farm operative. But while the number of looms in a factory can be indefinitely multiplied, the agricultural acreage is a fixed quantity; consequently the increase in the productive power of the individual farm labourer led to a lessened demand for labourers, while at the same time the growing industries of the towns held out superior inducements in the form of higher wages and greater opportunities for advancement. And here, too, the development of the railway system has had an enormous influence in carrying to and from the farm with expedition goods which under old conditions had to be conveyed by horse-power to and from the nearest market town. Here, indeed, are to be found the principal causes of the rural depopulation which is usually attributed to one cause alone, viz., the repeal of the Corn Laws. Undoubtedly the repeal of the Corn Laws was one of a number of contributory causes, but it was probably one of the least important. The consolidation of small into large holdings, the general use of light chemical manures, involving little labour in their application, the marketing of grain by sample and forwarding it by

rail without carting the stock to the nearest market town, have all tended to the economy of labour. Beyond all other causes, however, the introduction and extending use of good tools, and especially of scientific labour-saving machinery, have operated in economising farm labour. Under the old system of hand sowing and hand reaping so much labour was wanted on the farm in seed-time and harvest that the farmer, to make sure of having it at his command when wanted, had to maintain a great many people all the year round, who, having very little to do for the greater part of the year, had to be content with mere subsistence wages. The necessity for economy in every direction, brought into operation by declining grain prices, stimulated ingenuity, and gradually farming tools and machinery were so improved that, except in very unfavourable seasons, the amount of farm labour wanted is not now much greater in seed-time and harvest than at any other season.

During the same period, however, the same causes were operating in the other grain-growing countries, and particularly, and even in a greater degree, in the United States. It is well enough known that the cost of carrying wheat from Chicago to Liverpool is a mere fraction of what it was forty years ago, but it seems to be overlooked that a greater reduction still in the cost of conveyance from the Western American farm has been brought about by the development and extension of the American Western

railway system. This has certainly during the same period reduced the cost of conveyance from the farm to Chicago even more than the reduction in the freight from Chicago to Liverpool. But this reduction in the cost of American wheat naturally enough discouraged the growth of wheat in Great Britain. Farmers found it more to their advantage to apply their land to other purposes, and so we find that while about the year 1846 our home growth of wheat averaged about 16,000,000 quarters, our imports of wheat and flour in that year were returned at 2,405,000 quarters; the figures for 1900 were 6,790,000 quarters and 23,390,000 quarters respectively.

The importance of those figures when the question of milling comes to be considered is obvious. They point to a complete change in the localities in which milling can be profitably conducted. From the earliest times and till within the last fifty years the art of milling made very little progress. The grain, more or less freed from impurities, was ground between millstones, and the bran, to which a good deal of the most nutritious portion of the wheat adhered, was sifted out. Mills were mostly of small capacity, and were scattered all over the country, most of them grinding local wheat which, if they were near the seacoast, they might fortify with a mixture of strong, dry foreign wheat. The gradual decline in wheat prices and the increase in numbers of the population made it more profitable for farmers

to produce meat and milk, and necessarily restricted the growth of wheat. At the same time the development of railways radiating from the great ports tended to centralise the milling industry there, and so step by step with the decline in country milling came an expansion in milling at the great import centres.

But along with this again came a complete change in the milling system. The most important element in this change was the substitution of steel rolls, and the gradual reduction process, for the ancient millstone process which reduced the wheat to flour at one operation. This process originated in Hungary about forty years ago, and, as operated there, was and is a complex process. The Americans adopted the Hungarian process about thirty years ago, and while adhering to it in all essential particulars, they greatly simplified and adapted it to their own special conditions. Within a few years thereafter the American millers began exporting what was then known as "new process flour," directing their attention mainly to the British markets. The quality of this flour was so high in proportion to the prices at which it was sold that it was universally believed to be mere surplus stock disposed of at a loss in order to permit of American millers running their mills to full capacity and so enabling them to make good profits out of their home trade. Consequently British millers waited confidently for the time when the flow of this

imported flour would cease, meantime experimenting tentatively and cautiously in the new process themselves. It came to be gradually known, however, that there was money in "new process milling," and that the American millers had really been making large profits on their export sales. As soon as the millers of Great Britain realised this they set to work and remodelled their mills, and are now able to compete on equal terms with millers in any part of the world.

As a matter of fact flour milling is a highly profitable industry in the great wheat-importing centres or wherever in the country there are sufficient and regular supplies of home-grown wheat, provided the mills are up to the modern standard. There is no evidence whatever that Free Trade has done a particle of injury to flour milling, although it has certainly been one of a number of causes which have changed the localities in which it is conducted.

On the other hand, Protection in itself could not help it. The reason why many flour millers would like a return to Protection is that in the adjustment of the tariff as between imported wheat and flour the ratio would probably be arranged so as to discriminate against flour, and thus operate as a bounty to them. The history of the recent short-lived corn tax illustrates this point effectively. Flour is not the only production from wheat, nor do all kinds of wheat produce the same percentage of flour. When Sir Michael Hicks-Beach imposed the tax

of 3d. per cwt. on wheat he consulted the British millers as to what would be the proper tax to place on imported flour, and was advised by them that 5d. per cwt. on flour was equal to 3d. per cwt. on wheat. Now as 112 lbs. of ordinary average foreign wheat will produce about 80 lbs. of flour and 30 lbs. of by-products (known as offal and used for cattle feed), the tax should have been rather more than 3½d. on wheat if 5d. on imported flour was taken as the starting-point. The ratio of 3d. and 5d. was avowedly adjusted to meet the case of dirty wheat, and wheats of poor flour-producing capacity, and so of course in using the clean, dry wheat of high flour percentage usually imported it operated as a bounty. But here again another point emerges. The ratio of 3d. and 5d. ignored the offal and permitted it to come in duty free, while it was raised in selling value by the amount of the import duty levied on other competing grains used for cattle feed. When the corn tax was removed it was stated that the millers, depending on its permanence, had spent a great deal of money in enlarging their mills, and that its removal was a great injustice to them. After the Corn Tax was removed the Protectionists in the House of Commons undoubtedly greatly exaggerated the advantage the millers had enjoyed, which could not really be shown to exceed 3s. per ton of flour produced, but even this advantage certainly enabled them to increase their production materially

during the year the corn tax was in operation. This, however, necessarily involved the production of a larger quantity of offal, and as the home market for this class of cattle food is not capable of great expansion, an outlet had to be found for a larger quantity than usual in the Baltic countries, particularly in Denmark. There is always a large demand on Danish dairy estates for offals at low prices, and the offal bought from Great Britain in due time finds its way back in the form of Danish butter and bacon.

The case of the English country miller remains for consideration. The number and importance of country mills necessarily declined with the reduction in the growth of wheat, and of those which remain in the business many find their best line of competition in fortifying their soft, sweet home flour with a mixture of strong imported flour. An import duty on wheat to be of any benefit to them would therefore require to be heavy enough to raise prices to the level which would stimulate the home growth. A protective duty which stopped short of this, and at the same time discriminated against imported flour, would tend to give the port millers absolute control of the trade, and they would naturally find it convenient to ship their offal in large lines to the Continent at low prices, which indeed is the practice already.

This naturally leads up to the so-called "dumping" of American flour in British markets; and it

may be confidently stated that if dumping means the systematic selling of goods at a loss, there is no dumping of either American or British colonial flour in Great Britain. Millers on the North American Continent are working with the ordinary object of making a profit. Some of them export nothing, some of them cultivate part home and part export trade, and some cultivate an export trade almost exclusively. Before British millers modernised their mills, and the margin of profit was large, American flour was frequently consigned for sale on arrival ; since the British millers improved their mills, and so cut down the margin of profit on Transatlantic flour, both American and Canadian millers have made a practice of selling their flour outright before shipping it, and the only kind of dumping they do is the same kind of dumping which British millers do with their offals, and which indeed is the rule with all manufacturers, viz., they sell their goods on a narrow margin of profit where the order is large and the expense small, because all the profit is net without deductions.

Neither is there any such thing as an American Milling Trust. An attempt was indeed made five years ago to organise a milling trust, but it quickly ended in disaster. None of the conditions which go to the successful formation of a trust exist in the milling business as it is conducted in America.

The competition between British millers who import wheat, and foreign and colonial millers who sell

flour in British markets, is at present perfectly fair, and their enterprise and the strenuous competition of a free market have secured for the people of this country a supply of bread which, relatively to its high quality, is certainly the cheapest in the world.

How high Protection affects milling can be seen in the case of France, which levies a duty of 12s. 2d. per quarter of 480 lbs. on imported wheat. France is nearly self-supporting in the matter of wheat supplies, and yet this duty of 12s. 2d., acting as an impassable barrier against imports until the price rises to at least 12s. 2d. per quarter above the open market level, was sufficient to keep the price of wheat in France on an average of the last five years 9s. per quarter higher than the open market price. But a fiscal system of this kind leads to great instability in the level of prices, values rapidly mounting to an import level in times of scarcity and sometimes sinking to international parity in times of abundance. Now and again, indeed (as for about two months during the high-price year 1898), it is necessary in deference to public opinion to suspend the duty entirely. The French milling industry, therefore, is by no means so prosperous as the British industry, where the conditions are simple and the level of prices comparatively stable. The only section of the French people who have certainly profited by the French protective duty are the owners of corn-growing farms, and their position is protected by the fact that the quantity of land suit-

able for corn-growing cannot be increased, and therefore they have a secure monopoly. There is no limit to the number of mills which can be built, and France is notoriously over-provided with mills; but here again one of the usual results of high Protection discloses itself. To permit of French millers doing an export trade the duty paid on imported wheat is supposed to be refunded in the form of a drawback on the equivalent production of flour, but in practice the French millers contrive to extract from the French people what amounts to a bounty on their export sales. A certain production of flour is assumed, and the duty on the wheat is adjusted on this assumed basis. In reality the wheat produces more flour than the assumed quantity, with the result that the miller makes a profit on the drawback. It is therefore sometimes possible for the French miller to import wheat from America and Russia, mill it, and deliver the flour in Great Britain at a lower price than that at which the same flour can be manufactured when the wheat is imported direct and ground in Great Britain.

If a protective duty should be imposed on wheat and flour with a discrimination against imported flour, the port millers of the United Kingdom would in the first instance reap a direct benefit, but the country millers could not reap any benefit at all unless the duty increased the growth of English wheat. On the other hand, it is probable that mill-building in the ports would be overdone as in

France, and the competition amongst the millers themselves would speedily bring the margin of profit down to the lowest point consistent with continued existence. At the same time an unmanageable quantity of offal would be produced for which the port millers would find their best market in the Scandinavian countries, principally Denmark and Sweden, both of which countries admit mill offals, duty free. The importance of this consideration will be seen at once when it is stated that Sweden and Denmark in the year 1900 imported 690,000 cwt. British mill offals; in the year 1901, 923,600 cwt.; and in 1902, 1,106,100 cwt. It is therefore plain that any system of grain import duties which favoured the port millers would necessarily have to be accompanied by a protective duty on imported continental dairy produce or by an exemption from duty of coarse grains used by English farmers for feeding cattle.

It is perhaps at this point that the bargaining power which seems to be an inseparable feature of the new Protection might come into operation. This bargaining power, of course, has two sides. While the Government is bargaining with Foreign Powers, our protected industries, like protected industries in all protectionist countries, would be bargaining with the Government, and, of course, the richest and most concentrated industries in such a contest would have the best of it. British milling is not a highly concentrated industry, and possibly when it

came to a question of bargaining it might get the worst of it, and find its protection traded away for the benefit of some more powerful industry.

In view of that serious possibility, British millers may be advised to bear the ills they have, and under which they manage to live and prosper, rather than to agitate for a change which if effected might eventually bring disaster in its train.

THE IRON AND STEEL TRADE

By Hugh Bell

"I SOON found out the Person's House to whom I was recommended, presented my Letter from his Friend the Grandee in the Island, and was received with much Kindness. This great Lord, whose name was *Munodi* . . . was a Person of the first Rank, and had been some years Governor of *Lagado*. . . . The Sum of his discourse was to this Effect. That about forty Years ago, certain Persons went up to *Laputa*, either upon Business or Diversion, and after five Months' Continuance,[1] came back with a very little Smattering in Mathematicks, but full of Volatile Spirits acquired in that airy Region. That these Persons upon their return began to dislike the Management of every Thing below, and fell into Schemes of putting all Arts, Sciences, Languages and Mechanicks upon a new Foot. To this End, they procured a Royal Patent for erecting an Academy of PROJECTORS in *Lagado*; and the Humour prevailed so strongly

[1] Mr. Chamberlain was about three months in Africa.

among the People, that there is not a Town of any Consequence in the Kingdom without such an Academy. In these Colleges, the Professors contrive new Rules and Methods of Agriculture and Building, and new Instruments and Tools for all Trades and Manufactures, whereby, as they undertake, one Man shall do the Work of ten ; a Palace may be built in a Week, of Materials so durable as to last for ever, without repairing ; all the Fruits of the Earth shall come to Maturity at whatever Season we think fit to choose, and increase an hundred Fold more than they do at present, with innumerable other happy Proposals. The only Inconvenience is, that none of these Projects are yet brought to Perfection, and in the meantime the whole Country lies miserably waste, the Houses in Ruins, and the People without Food or Clothes. By all which, instead of being discouraged, they are fifty times more violently bent upon prosecuting their Schemes, driven equally on by Hope and Despair. . . ." (*A Voyage to Laputa*, &c.)

If the strange enigma who walked among men under the name of Jonathan Swift had lived in London in 1903 instead of two centuries earlier, his bitter humour could hardly have expressed more incisively than is done in the passage I have quoted his appreciation of the situation in which this country now finds itself. Great Britain of to-day resembles in all particulars the country which, in the kingdom of Laputa, was under the control of

Munodi. "Neither do I remember," says Gulliver, "ever to have seen a more delightful prospect." Her wealth, measured in what way one pleases, is enormous, and is growing. The condition of her people has improved decade by decade, as is shown by their expenditure, by their savings, by their vital statistics, and in every other way in which well-being can be estimated. Pauperism has diminished. Incomes and wages are much larger than they were thirty years ago. The very paupers themselves are more than twice as well off as they were half a century since. In 1854 the amount expended per head in England and Wales was £6 2s. 2d.; for the quinquennium ending with 1899, £12 18s. 5d.; and for 1902, £14 8s. 4d. One feels almost compunction at being obliged to add that the percentage had fallen from 4·6 in 1854 to 2·6 in the quinquennium 1895–9, so that relatively only about 55 per cent. of the proportion of 1854 take advantage of the greatly improved conditions of to-day. These statements are based on returns the truth of which is, I believe, not questioned. But no observant man can move about the country without being struck by the immense improvements which have taken place. Every town of importance is surrounded by suburbs filled with comfortable houses, public parks abound, schools, often almost palatial in appearance, are scattered about at convenient intervals. Even the great and thorny question of the housing of the working classes appears to be solving itself, for,

viewed as a whole, overcrowding tends to diminish. In a word, no sign of material well-being is wanting. These facts are not set down in any spirit of supine optimism which ends in a "rest and be thankful" sigh. But it is well, while every paper is full of complaints about our trade and its future, to call attention to signs of prosperity which those who contrast our imports with our exports pass by without notice.

It is with this condition of domestic well-being that tariff reformers ask us to interfere. We are forbidden to consider anything which shows we are prosperous, and are invited to concentrate our attention on circumstances which are held to demonstrate our approaching ruin. Having reduced us to a state of abject alarm for our future, our new philosophers, like those of Laputa, would persuade us to accept as a cure for a malady, of which we deny the existence, a remedy which we say would be of no avail even were the facts as they are represented.

The grounds for our refusal can only be found by examining with care the condition of the trades for which our medicine-men propose their nostrums. Among these trades the great iron industry stands pre-eminent. It is noteworthy that all those who favour the fiscal reforms with which, in terms "changeful, vague, importunate and loud," we are threatened, draw illustrations from this trade. On the one hand they magnify, quite properly, its

importance, while on the other they dwell on the peril in which it is supposed to stand. Its rapid growth and its present magnitude are held up to our admiration, only to inspire terror at the prospect of its imminent ruin. And having flattered our efforts in the past, and alarmed us for our position in the future, they leave us without any clear idea as to what is to be done to avoid the disasters with which we are menaced. Now it is interesting to observe that for at least three centuries this trade has been the chosen battle-ground of those who, for one reason or another, considered it the function, and indeed the duty, of the State to provide against evils which it was thought would flow from the unregulated development of commerce and industry. Mercantilism, with all its strange offshoots, was but the outcome of the opinion that buying and selling could not safely be left to the buyer and the seller, but must be controlled by the wiser brains to whom was entrusted the government of the world. A sanction, higher than any mundane power, gave authority to these interferences and the will of the Almighty, as conveyed through a sovereign whose divine title was accepted, was, in ultimate recourse, adduced to silence all doubters. I justify this statement by one example, where many might be cited, when I point to the usury laws. "In former times," says Blackstone, "many good and learned men were opposed, from doubts about its legality *in foro conscientiæ*, to any increase of money by way

of interest—an hostility which they grounded . . . on the prohibition of it by the law of Moses among the Jews. . . . Hence the school divines branded the practice of taking interest, as being contrary to the Divine law, both natural and revealed; and the canon law proscribed the taking of any, the least, increase for the loan of money as a mortal sin."

When so wide a view of the function of the government was taken it is not surprising that the greater was assumed to include the less, and any plausible ground of public policy, any suggestion of moral advantage, was seized with avidity as justifying interference. In the reign of Elizabeth, therefore, we need not be astonished to learn that the preservation of the timber trees of Kent and Sussex warranted interference with the iron trade of those counties. Two centuries later, the tanners of the kingdom alarmed the legislature by averring that the decay of the iron trade was making wood valueless, and asserted that if something were not done coppices would be grubbed up, and there would be neither oak for shipbuilding nor bark for tanning. Dip into the records of the iron trade where we will, we may be sure to find the same story. Swedish iron shall be prohibited admission to this country for the benefit of one set of people, or shall be admitted for the profit of another. The importation of iron from the American colonies shall be encouraged lest the manufacturers there "be forced to work it themselves, to the great decay and prejudice of the iron

trade in this kingdom." (From a Petition to the House of Commons in 1736.) A century earlier, in 1637, Charles I., by proclamation, ordained that pigs of iron made in England were to be marked by his surveyors and that iron was not to be exported without his license. In these days of coal-export duties it is amusing to read Ralph Gardener's Petition of 1655, praying for "a revival of the never-to-be-forgotten statute of 11 Rich. II., cap. 7 (1388), for a free trade to all, which voided all monopolies and charters, as being the greatest grievance in a commonwealth." He urged that this would not only "make England equivalent to Venice, Holland, and other free rich States, in riches, but preserve timber, and reduce coals under 20s. the chalder all the year at London." But most remarkable of all is the pamphlet dated 1756, and entitled—

The
CASE
of the
IMPORTATION
of
BAR-IRON
from our own
COLONIES OF NORTH AMERICA;

Humbly recommended to the Consideration of the present Parliament, by the IRON MANUFACTURERS of *Great Britain*,

which is reprinted in the second volume of the "Journal of the Iron and Steel Institute" for 1887. Adam Smith's "Wealth of Nations" was published in 1776. At the date of the pamphlet to which I am referring he was thirty-three years of age. But for these dates we might suppose the iron manufacturers of that day had got their political economy from the founder of modern economics. I should like to reprint the whole document, but the space at my disposal forbids this. I must, however, set out in full the "Preliminary Propositions":—

"I. THERE cannot be a clearer Proposition concerning Trade, than, That it is the Interest of every Manufacturing Country to get as great a *Choice* and *Variety* of *raw* Materials, and upon as *cheap Terms*, as can possibly be procured. For an Error in this respect, is fundamental, and hardly to be corrected by any subsequent Care or Diligence. Therefore the Legislature hath wisely ordained, That though Wool, for Instance, grows in greater Plenty in *England* than perhaps in any other Country, yet the Wools of all Nations shall be admitted into *England Duty-free*; justly considering, That we can never have *too great* a Choice and Plenty of that necessary Material of extensive and profitable Industry, or upon *too cheap* Terms.

"II. A second Proposition, not inferior either in evidence or Importance is, That unless some Commodities are taken from other Countries by Way of *Barter* in the Course of Trade, You can have but a

small Vent for your own Manufactures; it being impossible for any Nation to make *all* their Payments in Gold and Silver, even if they abounded with the richest Mines of those Metals. Nay, though it were possible, it may be greatly questioned, Whether it is not more for the *Interest* of a *Manufacturing* Nation to import sometimes raw Materials by way of providing for the *future* Industry of their People, than to be *always* importing Gold and Silver; which, when they come to be unconnected with Labour and Industry, (as in this Case they would soon be) have no other Effect, than to introduce Laziness, Vanity and Extravagance. And in the End Poverty.

"III. A third Proposition, by way of Preliminary, is this, That *Cheapness* in regard to *Price*, and *Goodness* in regard to *Quality*, are the Support and Prop of all Manufactures: And that it is impossible, in the Nature of Things, for a Nation to preserve any Manufacture, if they strike off, or suffer to be struck off, these two grand Pillars, Cheapness and Goodness. They may indeed tamper for a While; and seem to do something, not unlike a Quack in Physic, towards botching up a broken Constitution; but it will soon appear, that all they have been doing, was only to make bad worse."

Our eighteenth century manufacturers proceed to deal with the history of legislative interference with their trade from 1751, when "Application was made to Parliament for the Admission of Bar Iron *Duty-*

free from our own colonies." They set out how . . . "after various Struggles, as is always the Case, between Self Interest and the Public Good, the contending Parties seemed to compromise the Difference," and Bar Iron was to be imported Duty-free into London. The conditions and limitations of this permission were such that "in short as the Case stands at present, this Iron cannot be used in and about London and it shall not be permitted to be carried to those Places where it may be used. . . . The advocates of a *free Trade* were glad of getting even *so far* . . . hoping, that when the present Clamours had subsided, and Men's Minds became more opened and enlarged by . . . the natural Progress of Truth, a convenient Season might be found for making this particular Indulgence . . . become a general Benefit to the whole Kingdom."

The iron manufacturers next proceed to describe "the Persons concerned in the Iron Trade" who "are generally arranged into two Classes, The *Iron* MASTERS and the *Iron* MANUFACTURERS." The former, they say, are few in number, but must be "Men of Great Substance, great Capitals in Trade, and capable of exerting a very dangerous Influence when they find it their Interest to do so, over Men of needy Circumstances and small Capitals, dependent upon them." The Iron Manufacturers, on the other hand, "generally speaking and by way of Comparison with the former, are but of

middling Fortunes," but they add, "There is no sort of Comparison, in a *National* View, between the Importance of the one, and that of the other. And yet the whole Contest in this affair lies between these two sets of Men, The *Iron-Masters* on one side, and the *Iron-Manufacturers* on the other: Whereas besides all other Considerations, the Iron Manufacturers are to the Iron-Masters in Number, at least as TWO THOUSAND to ONE."

The authors of the pamphlet next state eight "FACTS" in connection with the trade. (1) The iron manufacture is increasing. (2) The last application to Parliament has increased the price. (3) The trade in Swedish and Russian iron is in few hands, and may be made the subject of local duties in the country of production. (4) These Governments are already "stinting the making of Bar Iron within their respective Dominions." (5) Charcoal is rising in price. (6) American Bar Iron has some special qualities. (7) American Pig Iron, owing to the carriage on it and the cost of Charcoal, produces dear Bars. (8) The growth of the iron trade adds to the revenues of the Crown. "The Revenues of the Excise and Post-Office, in particular, have been doubled, trebled, quadrupled, and even sextupled, in the Counties of *Stafford* and *Warwick*, since the first settling of the Iron Manufacture in those Provinces." The writers next set out six "REASONS," to justify the "present Application to Parliament." I will not attempt to summarise these; let it suffice

that I should say they breathe the same spirit as the Facts. They are followed by the statement of five "OBJECTIONS" and the "ANSWERS" of the writers to these. I quote Objection III :—

"If the *Americans* are suffered to import their Iron *Duty-free*, all the *English* Furnaces and Forges must stand still : Because We cannot pretend to sell as cheap as they can : Our Woods likewise must be grubbed up ; for it will not be worth the while to preserve them : And the Country, which is already too bare of Timber, will still be barer." And since it refers to another commodity of which we hear a great deal in these days, I also quote the third answer to it :—

"Answer 3rd. Experience, which is the surest Guide, hath plainly shewn, that Self-Interest is a very unfit Judge of future Effects, and of the Consequences of Things of this Nature. The present Cry is, 'That if Bar-Iron from America was to be admitted *Duty-free*, the Country would still grow barer of Timber, because it would not be worth while for the Land-Owners to suffer the Trees to grow.' Suppose therefore that instead of Bar-Iron you had said *Wool*, and that an Out-cry was to be raised against the free Importation of Wool : 'For, if Wool shall be admitted to come from other Countries, especially from *Ireland Duty-free*, Alack-a-day, what will become of Us ? Our Sheep-Walks must all be destroyed ; not a Flock, not a single Sheep will be left ; because it will not answer to

rear or keep them: The Tenants must all break; the Landlords lose their Rents; and the Government its Taxes. These will be the consequences of admitting the Importation of Wool *Duty-free.*' Now, you must allow, that this Plea, were it made (and most probably it *was* made) at the Time, when it was debated, Whether it was right to admit foreign Wools *Duty-free*:—I say, that this Plea is at least as good and as reasonable as Yours. You must acknowledge likewise, that the Proprietors of Sheep Lands, and the Growers of Wool, are, in every Sense, a much more considerable Body of Men than the Iron Masters, and the Proprietors of a few Wood-Lands: And you must confess, because it is in vain to deny it, that there is a much greater Plausibility in the Argument for opposing the Importation of Wool from our *Neighbours* in *Flanders*, *Germany*, and *Poland*, especially from our *next-door* neighbours, the *Irish*, (in all which countries Land and Labour are *much cheaper* than in *England*) than it would be to oppose the Admission of Bar-Iron coming from so distant a Country as *North America*, where, if Land and Charcoal are cheaper, Labour (the *Principal* Concern) is infinitely dearer. Yet, notwithstanding the Plausibility of the Objection, sure and long Experience hath made it to appear, that the Admission of Foreign Wool *Duty-free*, hath been so far from preventing the Growth of *English* Wool, that we have at this day more Sheep and more Wool, the Product of *Great Britain*, than ever

we had in former Times." The answer ends with the following sentence, which seems to be as true and as applicable to-day as it was a century and a half ago: "And if you are desirous of knowing the *Reason* of this Fact, it is plainly this,—The free Admission of Materials is the Cause of Labour; Labour is the Cause of Populousness; and a populous Country will always produce more Commodities, and have a readier Market for them, than if it had been thinner peopled."

I have dwelt at some length on this pamphlet, for it appears to me not only to contain the gist of all our present discussion, but to be in itself a more complete setting out of the case for protection in the iron trade and the arguments against it than I have found elsewhere in looking through the earlier records of the trade. It has, moreover, a further and larger interest. It shows once more the falsity of the allegation that Free Trade is a new doctrine invented some sixty years ago. All the arguments to which we are accustomed are to be found in the mouth of the Iron Manufacturers of 1756. Can any one doubt that the course of events was at that date tending more and more to the development of commercial freedom? It is a commonplace to call Pitt a Free Trader. His administration of the finances of the kingdom was marked by the sound principle that the object of a tax should be to obtain revenue with as little pressure on the taxpayer as possible and with a single

eye to that revenue and not to any other object. The outbreak of war with France in 1793 put a stop to all possibility of further progress in these directions. When peace was again established, a quarter of a century later, England groaned under a burden undertaken to preserve herself and Freedom from annihilation. All hope of dealing with financial reform on a large scale was postponed till she should have recovered from the terrible exertions and sacrifices of the past struggle. But before another quarter of a century had elapsed taxation had again become the burning question of the day. By the fourth decade of the nineteenth century the whole politics of the country were dominated by the question which, in 1846, found its solution in the repeal of the Corn Laws.

It is the policy of which that repeal was but the first-fruits which we are asked to reconsider. We are to impose taxes not for revenue, but to secure the goodwill of our fellow-subjects in the Colonies. We are to tie our hands from buying where we find it most convenient and profitable because the statesmen tell us that our trade will be benefited by going to this or that market for our goods. We are to run the risk of imperilling a prosperity such as I have indicated for the doubtful advantage of postponing a ruin of which we deny the imminence. We are called upon to imitate Germany, where the working classes are protesting to the best of their ability against that *Brod Wucher* (bread usury)

from which we escaped sixty years ago, or America, where Steel Trusts, with their shares at 80 per cent. discount, are to ruin our iron industry. America forsooth! Let me quote some passages from the letter of a private correspondent dated from California in August of this year (1903):—

"After living in this country for seventeen years, under the domination of Protection, I think nothing worse could happen to Great Britain than that the people should be deluded into adopting such a policy. I verily believe that here every department in life, from Congress to State Legislature, from State Legislature to Municipality, from Municipality to Trade Union, and from Trade Union down to the newsboy at the street corner, is demoralised by the protective idea and by desire to get special advantages for classes or localities at the expense of the public.

"Of course you have recognised that in the outcry of 'American invasion' much that came from this side of the water was bluff and boast. For example, at the time the locomotive engine builders here were supposed to be doing so much in cutting into European and colonial trade they were six months behind in their home orders, and the railway companies here were so short of locomotive power that they could not haul freight in anything like a reasonable time. In consequence thousands of boxes of oranges rotted in transit or at the packing-houses where empty trucks were not forthcoming.

"From all accounts you have had great difficulties with your Trade Unions, but I very much doubt whether you have had to contend with anything approaching the arbitrary and domineering spirit that has been specially prevalent here during the last six or nine months more particularly. Nothing but the continuance of good harvests and high prices for grain prevents the trade unions from killing the goose."

I dare not go on, for my correspondent launches into criticism of individuals which I do not feel justified in printing, though, so far as my knowledge goes, I entirely concur in them. If we are to imitate America, shall we follow her example in the treatment of her children in Southern cotton mills as described in the book recently published by Mrs. and Miss Van Vorst?[1]

I myself see little or nothing that I wish to take from the Great Republic. I do not desire to have a crop of millionaires; I do not wish for a population striving for wealth at any cost; I do not value a political system which, unless all accounts are false, encourages and promotes corruption. I would rather see the iron trade of this country perish than purchase its prosperity on the terms which protectionists suggest.

What, then, is this trade of which we hear so much? I will not load my paper with figures

[1] "The Woman who Toils." By Mrs. John Van Vorst and Marie Van Vorst. (Grant Richards.)

which are accessible to all. The general results which I am about to state can be verified, by anyone who desires to check them, from public documents easily obtainable. The total value of the trade may be stated as amounting to between £150,000,000 and £160,000,000 a year. I include both the home trade and the imports of iron manufactures, which amount to about 10 per cent. of the whole. I regard every article made chiefly of iron as belonging to it. A needle and a ship may be taken as the extremes of the trade. It undergoes violent fluctuations from causes easily explained, which would, however, take up too much space to set out here. Subject to these fluctuations, it has been uniformly progressive during the half-century dealt with in the recently issued blue book on "British and Foreign Trade and Industry" (Cd 1761). I might go back much further than 1854, for, though its would-be protectors submitted it to the repeated torments to which I have already referred, it showed its vitality fully a century earlier. As knowledge increased, the processes were revolutionised again and again. The Catalan hearth, the blast furnace, the puddling furnace, the Bessemer converter, the open hearth furnace, represent successive changes in the conditions of the industry, each bringing great benefits to the consumer, but causing, for the moment, great disturbances to the trade. These disturbances have been met and turned to ultimate advantage by the indomitable

courage and perseverance of those engaged in the industry. Is it surprising that, with such a history, they shrink from a proposal to add the uncertainties of fiscal legislation to their existing difficulties?

When all is said, protection means that for some advantage to be gained to the community I shall be called upon to give up my right to buy where I please and compelled to buy where the Government wills. The State does not, and cannot, know my needs as I know them. Yet it asks to dictate to me how I shall satisfy them. I do not deny that, on cause shown, I should give up my freedom, but I do deny that any cause has been shown in the present case. What risks are being run? The home trade is worth at least £130,000,000 a year. It affords employment to over 1,000,000 men. The general head "Metals" in the census of 1901 gives 1,174,200 as the number of males over ten years employed in England and Wales, and iron is by far the most important metal. But it gives employment to thousands of men on the railways and to a very large proportion of the men engaged in mining. In the census returns, "Conveyance" stands for 1,249,200 and "Mines and Quarries" for 800,200. The only other headings in the census of England and Wales which exceed a million are "Agriculture," with 1,071,000, and "Building" with 1,042,000. "Textiles" employ 492,000 males over ten, but it is only right to add that 663,200 women and girls find employment in these industries, while "Dress"

employs 414,600 males and 710,900 females, and "Food, &c.," 774,300 males and 299,500 females. Giving full weight to all these figures, I think I am still entitled to claim for "Metals" the first place in the industries of the Kingdom. It is a serious matter to interfere with the well-being of so important a section of the community. It may be improved? Yes, but it may be worsened, and it will be difficult, in so complex a business, to say whether the improvement is caused by the change. "*Dans le doute abstiens-toi*" we say to our tariff reformer. If he persists, we ask what he proposes. Will he tax food? If he does, can it be doubted the price will rise? The recent development of the discussion appears to recognise this as incontestable, and I need not labour the point nor do more than refer to the significant figures on pp. 120–6 of the return already cited and the graphic representation of the figures in the chart which follows. If the price of the taxed article rises and wages rise, will the ironmaster be better equipped for meeting the competition of the world? If wages do not rise, will his men regard the change with satisfaction? The interpretation put on some unguarded words of Sir H. Campbell-Bannerman's are, I believe, far from the truth. The majority of the labouring classes in this country cannot be regarded as on the verge of starvation. Fact after fact can be cited to show that this is not any way near the truth. But while I say this I do not deny that the position of

the artisan needs the most earnest care from the governors of the country. The future depends upon our ability to increase his efficiency. To place an impost on the necessaries on healthy existence is the last way to bring about this most desirable result.

Shall we tax raw materials? We must first determine what we mean by the term. Spanish ore is a raw material to some Cleveland ironmasters, but it competes directly with those who use Cleveland ironstone. Shall I and my associates, shareholders and workmen, who produce an all-British article, be put to a disadvantage as compared with those who import, in the form of ore, about twenty shillings worth of Spanish labour for every ton of iron they make? Pig iron from abroad competes with us both. Is my neighbour, who can obtain a contract by the purchase of, say, Canadian pig iron brought here because my Canadian fellow-taxpayer pays a bounty to the Canadian ironmaster, to forego his advantage and discharge his men? And so on through the whole list. Only the other day I was told of a man holding shares in two large undertakings in the north of England who was declaiming against "dumping." His interlocutor, a director of both companies, put to him this case: "I recently secured a contract for one of your companies from the other for a piece of work, and I was enabled to do it because I bought foreign steel cheap. You got a dividend

owing to the profit I made on the contract, and you were enabled to earn a dividend by means of the cheap apparatus I purchased. Do you feel inclined to give up both these profits?" I was given to understand that the answer was not suitable for publication.

I myself have bought electrical machinery abroad. It is hard to find a more highly finished product than a dynamo. To me it was an implement of production, practically a raw material. I used it to produce my finished article. Is it proposed to prevent me? I no longer need to go to Belgium for electrical machinery. British legislation had hampered electrical enterprise in this country to so great an extent that it was not the interest of the British manufacturer to embark on the trade. The difficulties are partially removed, and, at once, mobile and adventurous capital flows to this industry. This is an example of the danger of the interference of the legislature with trade, a danger which the present suggestions will increase rather than diminish.

Let it be borne in mind that the exports of the iron trade last year were valued at £60,000,000. As far as the discussion has gone these exports are to be encouraged. Will they be promoted by being made subject to any of the restrictions which are proposed? I guard myself against assuming that the time may not come when fiscal reformers will protest against such exports as the iron trade

provides. Coal has long been regarded as an article apart, requiring special treatment. But at least 70 per cent. of the value of coal is labour. If coal needs special treatment, so does iron. A ton of pig iron represents about two tons of coal, a ton of steel not far from twice as much. In both cases about 70 per cent. of the value is labour. Steel made from Cleveland pig iron robs the country of about four tons of ironstone and four tons of coal, both equally irreplaceable. If I am wrong to place the fuel in the hands of my competitor in the trade of the world, why not also the steel?

That this question is not idle may be gathered from Mr. Balfour's pamphlet on "Insular Free Trade." In the table appended to it, machinery is excluded from the value of British exports. No doubt, by dint of excluding first one and then another of our principal exports, it is possible to arrive at the conclusion that we have none of importance. This cannot be the reason why Mr. Balfour excludes machinery as well as coal. May it be found in the following considerations? In the golden age, now alas! long passed, Britain was the factory of the world. All important implements of production were to be bought from her. With a want of wisdom which we now deplore, she made haste to grow rich, and supplied to all comers the produce of her factories and workshops. Germany drew from her capital and machinery, and established important industries. Dazzled by her

own great and growing wealth, she failed to observe that the wretched Teuton, seeking some employment for himself, was embarking on industries which properly belonged to her, but which for the moment she was too busy to take up.

To America she sent rails by the thousands of tons and money to lay them down. The (I trust mythical) anecdote of the colloquy between an American railway magnate and a Welsh ironmaster is not so irrelevant as it may seem. They discussed the development of the American railways in the fifties. Said the ironmaster, speaking of the rails: "They were pretty poor stuff we sent you!" "Yes," said the railway magnate, "they were; but not worse than the bonds we gave you for them." Not only did America and Germany benefit by the Pactolian stream which flowed from Great Britain, every country was watered by the same fertilising flood. Short-sighted mortals! Had Mr. Balfour been with our ancestors he would have warned them of the fate they were preparing for themselves and us. They were in fact breeding up competitors who would ruin them. Each cargo of rails made it more certain that the mineral resources of America would become a danger to English trade. Had they been wise they would have said: "Nothing shall leave these shores which will add to the wealth or productivity of the world. A steam engine may be used to produce something we now produce, a rail may convey to the coast something we now send to

America." I do not know where to draw the line—"a bale of piece goods may clothe a man, who, wretched being, will work and make something we now make." At every port would have been stationed a servant of the State to forbid the export of that which might in the future militate against the trade of the island. Insular Free Trade would have been a misnomer, for, as they feared to send anything out, they would have been unable to bring anything in, and the Trade of the country would have been Insular without being Free.

But the whole protectionist view depends on a radical misconception of the conditions of trade. In all the papers by fiscal reformers that I read, our imports appear to be treated as an irresistible flood which threatens to overwhelm us. No one seems to realise that they come here because those for whom they are destined have chosen to receive them. They were bought by men who saw their way to make a profit in the transaction. Let it be borne in mind that out of 528 millions sterling imported in 1902 over 440 millions were food and raw materials, and some 87 millions manufactures. We have seen how difficult it is to draw a clear line between raw materials and manufactured goods. Why should we suppose that the importer of Spanish ore is clever enough to make a profit, while the importer of a Belgian dynamo is going to lose by the transaction? If it could be shown that, blind to his own interest, he was losing, and that he and all the rest

of the importers were in like case, something might be said in favour of restraining him. But is there any proof of this? No sort of attempt has been made to minimise the startling figures relating to our prosperity and growing wealth. One last instance of it I cannot refrain from adducing. Men travel by railway for pleasure or profit. It is a sign of having at least the railway fare loose in one's pocket. What has happened with regard to railway travel? In the quinquennium 1855–9 the whole population travelled 4·8 times every year; twenty years later (1875–9) the whole population travelled 16·2 times every year; twenty years later again (1895–9) 25·5 times every year; and last year the whole population of nearly 42 millions travelled on the average more than 28 times by rail. There is no sign here of imminent ruin or impending starvation.

I think I have shown that the fears expressed for the trade are groundless, and that the remedy proposed is not only unavailing, but inapplicable. There remains only one matter with which I should like briefly to deal. How shall we account for and view the great development of industry in other lands, and notably in America and in Germany? I have, in passing, pointed out how largely we are responsible for both, and indicated how little reason I see to regret what was done in the past. It cannot have been difficult to foresee that as population increased in both countries fresh sources of employment would be sought. That Germany

with her population of 57 millions should aspire to a larger trade than Great Britain is not surprising; that the 121,377 square miles of these islands containing 42 millions of people should think to stand, in the matter of trade, permanently above the United States of America, with over 3½ million square miles of territory and upwards of 80 millions of inhabitants, only requires to be stated to be shown to be a futile imagination. That we should continue to be relatively the richest nation in the world is not so absurd. We have an active and energetic people desiring many things which cannot be produced at home, but which foreign nations show no reluctance to provide for us. We have an enormous power of spending, for we possess an income larger than almost any other body of men on the globe. That we can be forced to buy what we do not want, and compelled to use our capital resources for that purpose, I cannot be brought to believe. There is a long road to be travelled before the £18 to £20 of gross imports and exports per head of the population in this country is equalled by the £7 to £8 per head of Germany and France and the £5 to £6 per head of the United States. While these countries are adding to their wealth by their foreign trade we shall not be failing to do likewise. It may be difficult, or even impossible, to estimate the annual increment of the wealth of Great Britain, but the figures we possess point to a sum measured by hundreds of millions sterling. All these things con-

sidered, I look forward with every confidence to the financial future of these islands. There are only two provisos to this opinion. The first is that we should steadily refuse to let our statesmen tamper with our commerce; and the second, that we should neglect no means, by education, by legislation, by any other methods devisable by the wit of man, to make our people, of all classes, as efficient as their competitors in other countries.

I have not dealt with one side of the great question of the day; I mean the Imperial as contradistinguished from the Insular side. This is not because I undervalue its importance. On the contrary, I feel it would be difficult to put too high the sacrifices I am prepared to make to uphold that great free Empire which in my judgment embodies the highest ideal of government. But I am profoundly convinced that this ideal is not concerned with pounds, shillings, and pence. It does not depend on the cash nexus. It has its roots in no notions of material welfare, but in a great unselfish sentiment of co-operation towards larger and nobler ends which seek the establishment and maintenance of justice, of progress and of freedom.

THE MACHINERY AND ENGINEERING TRADES

By Arthur Wadham, A.I. Mech. E.

(*Editor of the "Machinery Market"*)

IT is impossible to deny the fact that the machinery and engineering industries have developed and prospered enormously during the last fifty years, *i.e.*, during the "Free Trade Era," as we term it. The question which now engages attention is this : To what is the prosperity of the last half-century due ? Is it a mere coincidence of the "Free Trade" movement ; the natural result, that is to say, of increased inventive activity ? Or is the advance in wealth and general comfort which has taken place attributable in a greater or less degree to the national policy inaugurated in 1846 ?

I leave to other and abler writers the task of dealing with the social aspects of this most important inquiry. The duty before me—which I undertake with a certain amount of pleasure—is to trace the

effect of our Free Trade system upon the great branch of commerce which forms the subject of this paper.

In order to do this with clearness it is necessary that the history of the machinery and engineering trades previous to the middle of last century should be glanced at, and the position they occupied at that time indicated with some amount of precision. We shall in this way secure a proper standpoint from which to compare past and present, and to pursue our investigations. The next step will be to examine the points at which the machinery and engineering trades came into contact with, and were influenced by, the operation of our Free Trade policy. I venture to think it will be apparent to every one who will carefully study the course of events, both immediately after the adoption of our present commercial system and since, that so far as the industry I am dealing with is concerned, its prosperity and constantly growing magnitude is largely due, both directly and indirectly, to the operation of "Free Trade."

What do we Mean by "Free Trade"?

It is a waste of time to discuss any question unless the terms we employ are clearly understood, and therefore the phrase must, if possible, be rescued from the vagueness and misapprehension which surrounds it. For instance, we are frequently told nowadays that our trade is "not free," or that

we are the victims of "one-sided free trade," because of the fact that we are hampered by the prohibitive or restrictive tariffs of *other* countries.

In order to grasp the meaning of the term "Free Trade" let us recall the principles upon which our trade legislation was based in earlier times. Probably no better corrective to misunderstanding in regard to this great question can be adopted than that of examining the conditions under which our commercial system was carried on previous to the middle of last century. I venture to predict readers will find themselves able, after such an inquiry, to form an unhesitating judgment as to the wisdom of the Fiscal Policy which this country has pursued during the last fifty years.

Prohibitions and Restrictions.

The antithesis of "Free Trade" is "prohibited or restricted trade." Our country has had experience of both systems, and this provides us with material upon which to form a sound judgment. Writing in 1783, Adam Smith records the practice of his day in a precise and vivid manner. After referring to the duty of more than 5s. per ton imposed on the exportation of coal, he says: "The exportation, however, of the Instruments of trade properly so called, is commonly restrained not by high duties, but by absolute prohibitions. Thus, by the 7th and 8th of William III., chap. 20, sect. 8, the exportation

of frames or engines for knitting gloves or stockings is prohibited under the penalty, not only of the forfeiture of such frames or engines so exported, or attempted to be exported, but of forty pounds, one half to the king, the other to the person who shall inform or sue for the same. In the same manner by the 14th George III., chap. 71, the exportation to foreign parts of any utensils made use of in the cotton, linen, woollen and silk manufactures, is prohibited under the penalty, not only of the forfeiture of such utensils, but of two hundred pounds, to be paid by the person who shall offend in this manner; and likewise of two hundred pounds, to be paid by the master of the ship who shall knowingly suffer such utensils to be loaded on board his ship." [1]

The motive of these and other regulations of a similar character, as Adam Smith pointed out, was "to extend our own manufactures, not by their own improvement, but by the depression of those of all our neighbours, and by putting an end as much as possible to the troublesome competition of such odious and disagreeable rivals." To such an extreme was this policy pursued that it was made illegal under stringent penalties for "any artificer of any of the manufactures of Great Britain to go into any foreign parts in order to practice or teach his trade." By the 23rd George II., chap 13, the penalty against any person enticing an artificer to go abroad for the

[1] Smith's "Wealth of Nations," book iv. chap. viii.

foregoing purpose was, "for the first offence, five hundred pounds, and to twelve months' imprisonment, and until the fine shall be paid; and for the second offence one thousand pounds, two years' imprisonment and until the fine shall be paid." The artificer himself who ventured abroad in contravention of this law was outlawed.

This system of mercantile law lasted a long time, and abundant opportunity was afforded to test and prove its value. Statutes prohibiting the exportation of all metals (excepting lead and tin) can be traced as far back as the reigns of Edward III., Henry VIII., and Edward VI. The result of the nation's experience of these restrictions was not satisfactory, for we find that modifications of these laws were made from time to time. Sometimes these changes were reactionary, but on the whole the tendency was in the direction of Free Trade.

Trade Restrictions Abolished.

Finally, in August, 1843, a clean sweep was made, all prohibitions on the export of machinery being thenceforward removed[1] by the Customs Duty Bill, 6 and 7 Victoria, cap. 84. The administration of this law had previously been relaxed, for although between the years 1825 and 1843 the exportation of many kinds of machinery was still prohibited, it was left to the Board of Trade to use its discretion, each individual application from any person desirous of

[1] See "Porter's Progress of the Nations."

shipping machinery being considered on its own merits.

Three years later, viz., on June 26, 1846, the Corn Importation Bill (introduced by Sir Robert Peel) granting a free trade in corn, received the royal assent. By this Act the duty on wheat was reduced to 4s. when imported at or above 53s., until February 1, 1849, after which day the duty became 1s. per quarter only on all kinds of grain imported into the United Kingdom at any price.

This was followed in 1849 by another measure of equal, if not greater, importance to the industries of the country, viz., the repeal of the Navigation Laws. This Act, which was passed after much opposition, came into operation on January 1, 1850. Trade was henceforth "free," so far as our own country was concerned, and the true significance of the term is apparent. From that time the nation started on a fresh career, released from the narrowing and artificial bonds which hitherto had retarded its commercial progress.

Before passing on I must briefly mention the conditions under which the shipping trade was carried on previous to the Act of 1849. Under prior maritime laws the importation and exportation of goods from or to Asia, Africa, or America was restricted to English ships, of which the master and three-fourths of the mariners were to be English. Other countries retaliated, with the result that, until a reciprocal treaty was made with the United

States, British ships had to sail in ballast to America when they went there to get a cargo, while American ships came to Great Britain in ballast when they wanted a British cargo. The consumer in both countries accordingly paid double freight. Our merchants also laboured under the disability of having to pay whatever freight was demanded by a limited number of shipowners and trade was checked in consequence.

It is significant that these early restrictive Acts were all introduced under the title "An Act for the encouragement and increase of Shipping and Navigation," but the credit of having brought about the result aimed at must be given to the open-handed policy pursued since 1849. British shipping has increased from a tonnage of 3,360,935 in 1851, employing 141,937 men, to 9,524,496, employing 247,973 men. From the remarks of a writer on the shipping industry in a book [1] published in 1851, it appears that the repeal of the Navigation Laws had an immediate beneficial effect.

"The recent change," he says, "in the Navigation Laws is producing important results in the commerce of England with foreign nations. British shipping," it is added, "has already derived great advantages from these enactments. There seems every probability that as British shipping is now fairly brought into competition with foreign, great

[1] Knight's "Cyclopædia of the Industry of all Nations."

improvements will be made in shipbuilding; indeed, such improvements have already commenced."

We shall see presently that this had a very important bearing on the future of machinery and engineering.

WHY THE PROTECTIONIST SYSTEM WAS ABOLISHED.

It is said that the terrible experiences of the Irish famine and the helplessness of the country to deal with it owing to the inadequacy of our food supply, provided the final argument which induced Sir Robert Peel to amend the Corn Laws. But forces had been at work for a quarter of a century gradually, though surely, tending towards the emancipation of trade from the antiquated methods and barriers which cramped it.

The growth of population in the United Kingdom from less than 17,000,000 in 1801 to more than 27,000,000 in 1841 had altered the conditions of the country. Manufacturing operations had absorbed the energies of a large proportion of the people, and the agricultural resources of these islands being insufficient for the needs of the country, our food supply had, as a matter of sheer necessity, to be supplemented from other sources.

"Should these food supplies be admitted duty free, or should they be taxed?" This was the debatable question then, as it is now, with this difference, that whereas sixty years ago the object of the food protectionists was to maintain prices for

the benefit of the agricultural industry *in these islands*, the avowed purpose at the present time is to do so for the advantage of *Colonial growers*. The manufacturing and shipping trades had already attained a preponderance in the country's interests, and if they were to be successfully carried on in face of foreign competition, it was essential that all raw material, and food more especially—as the raw material of labour—should be purchasable at the lowest possible price. Dear food hampers manufacture, checks trade, and causes want. It had brought about those results at the time of Queen Victoria's accession to the throne, and the argument in favour of cheap food ultimately won the day.

The inauguration and rapid development of the Penny Post and of intercommunication generally, the power of the Press and interchange of ideas which had been rendered possible by the agency of steam and machinery, were powerful factors in winning the contest.

The issue was vast. The decision meant that the future of Great Britain was to be that of a great manufacturing and shipping nation, with world-wide connections, instead of one which must, sooner or later, find its limits within its own narrow boundaries.

It is conceivable that this country might have been able to supply its own food requirements fifty years ago if it had possessed the ingenious and powerful machines for ploughing, tilling, and reap-

ing available now; if also a better system of agriculture had been in vogue; and had land laws been in existence encouraging the cultivation of the soil to its full capacity. Those conditions, however, did not obtain; consequently we were compelled to pay other countries to do work for us which might have been done at home.

Whatever else may be done or left undone at the present time, our wise course lies in remedying now the deficiencies and mistakes of the past which remain unrectified. It is undeniably true that the more we can grow at competitive prices within our own shores the more profitable our trade will be. The produce of the soil and the efficiency of labour together form the primary source of all wealth. It is because the United States of America possess a superabundance of natural products that the fiscal problem in that country is of a different character to our own.

Effect of Free Trade.

I now come more closely into touch with my own portion of the subject. Foreign trade being thrown open without let or hindrance, an active exchange of our manufactures took place in return for the corn and food products bought by us from abroad.

The machinery and engineering trades of the country were amongst the first to profit by the change. The increase in the carrying trade, both by land and

sea, entailed in bringing larger supplies of corn to the English market from abroad,[1] provided additional work for railways and shipping, and as a consequence a growing demand sprang up for locomotives, marine engines, and all the mechanical paraphernalia needed for the handling and conveyance of merchandise. This in turn gave birth to subsidiary manufacturing trades, and stimulated existing businesses into greater activity. The employment of steam power and machinery thus rapidly increased, and, like a snowball, the volume of trade grew bigger at every turn.

Implements and mechanical appliances were needed by foreign nations for cultivating, harvesting, and transporting the greater quantities of food and raw materials produced to supply our requirements. An export trade in machinery followed as

[1] The quantities of wheat and wheat flour imported into Great Britain between the years 1825 and 1849 varied from 66,905 quarters to 4,835,280, or as other statistics give it, the average from 1829 to 1849 was 1,771,067 quarters annually, out of which Prussia supplied 435,791, United States of America 242,094, Germany 232,034, and Russia 209,237 quarters. It is interesting to observe that in 1849 the chief sources of our wheat and wheat flour supply were from the following countries (quantities stated in round numbers):—

France	750,000 quarters.
United States of America	600,000 „
Russia	600,000 „
Prussia	600,000 „

The gross total of *all kinds of grain and meal* imported in 1849 was 10,753,755 quarters, which included about 6,000,000 quarters of barley, oats, Indian corn, beans, and meal. This trade has been one of continued growth, our imports for 1901 being about four-and-a-half times greater than fifty years ago.

a matter of course, although it may be remarked that its growth was slow at first, as will be seen from the figures I shall presently quote. The substitution of machinery for hand labour has always required time, owing to the conservative attachment of human nature to old customs.

The prosperity of our machinery and engineering trades received an enormous impetus in other ways, owing to the increased import of grain. For instance, we may reckon that every additional thousand quarters imported, provided cargo for another vessel of the average tonnage of the time. The demand for additional steamships and their machinery, cranes and lifting tackle, plant for haulage, and so on, all brought in orders to engineering shops. The deepening and enlargement of harbours to cope with the increasing traffic, and the extension of travel for business and pleasure purposes which followed, also brought fresh business to the machinery trades. It may be added that similar influences are still continually at work.

Exports of Machinery.

Our export trade in machinery (to which reference has just been made) shows an enormous ratio of increase during the last fifty years. In 1850, when this branch began to assume substantial proportions, the declared value of our export trade classified under the heading of "Machinery and Millwork" was a little over one million pounds

sterling. Last year (1902) the returns were roughly 19 millions. I give the figures at intervals of ten years as follows :—

1850.	1860.	1870.	1880.	1890.	1900.
£	£	£	£	£	£
1,042,000	1,231,000	5,966,000	9,264,000	16,413,000	19,622,000

These figures represent the value sent out of the United Kingdom of locomotives and other steam engines ; gas and oil motors ; agricultural, mining, and textile machinery ; sewing machines ; and general machinery not specially designated. "Implements and Tools" come under another classification in the official returns, and are not included in these amounts.

The comparison of cash values is faulty as a measure of the relative magnitude of this department of trade at the beginning and end of the period under survey. For instance, it may be reckoned that the exports of 1850 would not exceed £250,000 in value if turned out under present-day systems of production. But ignoring this factor in the account, the volume of our machinery exports shows an increase of more than eighteen times in cash value during Free Trade times.

The following figures for 1902 show where we find our customers for these exports :—

	£
Foreign countries	12,652,000
British East India	2,933,000
British South Africa	1,730,000
Australia and New Zealand	1,437,000
Total	£18,752,000

(The amount is less than in 1900. This will probably be accounted for by the disturbance to trade caused by the war.)

It will be seen that two-thirds of this trade is done with foreign countries, and it is exceedingly important to observe that if any considerable portion should be lost by the proposed change in our fiscal policy we cannot look to our Colonies for adequate compensation.

The next table shows the movement of this trade during the last two decades, the value of machinery exports to our Colonies and Dependencies being given first, and next those to foreign countries :—

	1882.	1892.	1902.
	£	£	£
British East Indies ...	1,263,969	1,954,409	2,933,076
British South Africa ...	—	443,396	1,730,058
Australasia	1,190,766	888,315	1,436,633
Canada	—	139,059	—
Totals...	2,454,735	3,425,179	6,099,767
Foreign countries... ...	9,507,925	11,373,537	12,652,045
Grand totals ...	£11,962,660	£14,798,716	£18,751,812

The exports to Canada have ceased to come into the amount as a separate item. Both there and in Australasia the policy is to make their own machinery as far as possible.

The increase shown in the exports to foreign countries is slow, but there is a decided advance in spite of the substantial defection of Germany and the United States as customers. The following will

give an idea of the fluctuations of this trade with the two last-named countries :—

	1882.	1892.	1902.
	£	£	£
U.S.A.	627,496	1,051,856	685,543
Germany	1,354,850	1,485,959	68,025[1]

In the course of the controversy now taking place it has been contended that we ought to eliminate the value of our machinery exports entirely from computations of the foreign trade of the country on the ground that they are the reverse of profitable. Machinery (together with coals and ships) has been described in this connection as "pernicious."[2] The reason advanced for this dictum is that it stimulates the competition of rivals. If it be right to regard our machinery exports as a means of destroying our country's commerce, obviously the proper course to adopt is to revive without delay the old statutes abolished sixty years ago (referred to in the early portion of this paper), and once more to prohibit them absolutely. Before taking so reactionary a step it will surely be worth while, however, to inquire what substance there is in the argument. If the distinguished author referred to had examined the point more thoroughly before

[1] These are the only figures given in last year's returns in which Germany is specifically mentioned. The entry represents the value of steam engines only exported to that country. Other exports to Germany are included under the general heading, "Countries in Europe."

[2] See Part x. "Economic Notes on Insular Free Trade," by the Right Hon. A. J. Balfour, M.P.

committing himself so far as he has done, I am convinced he would have adopted an absolutely contrary view. Speaking broadly, it can be stated as an antithetical proposition that *our exports of machinery have created the great bulk of our foreign commerce, and are of far greater intrinsic value to the nation than their immediate cash equivalent.* In order to justify this statement we need only adopt the simple plan of inquiring, "What are the machines exported; what is their destination and purpose?" By way of example it will be found that last year we sent abroad to various countries locomotives to the value of £2,284,094. These locomotives are employed in hauling traffic on railways abroad. Another large portion of our machinery exports consists of railway plant, or machinery used either in the construction or for the equipment of railways. But since railways open up trade, by bringing buyers hitherto inaccessible to us into contact with our markets, none of these locomotives or machines can be denounced as "pernicious exports." Take another class, namely, machinery for the construction of docks, harbours, and irrigation works. The country has lately congratulated itself upon having brought a large tract of land within the area of cultivation in the fertile portion of the Nile valley by the construction of the Assouan dam. The machinery sent to Egypt for excavating, lifting, and carrying the material, as well as that for the sluices and other mechanical

appliances required to work the dam, and without which that magnificent work could not have been accomplished, were all part and parcel of the so-called "pernicious" exports. Again, amongst the machinery we send abroad are large quantities used in sugar and cotton plantations, the purpose of which is to cheapen the production of the raw material. Oil-mill machinery, agricultural implements, and many other appliances, serve similar ends. What would happen to our sugar, cotton, and oil trades if we might not send this machinery out of the country? How would the gold-mining industry of South Africa fare if it were deprived of the machinery we have sent abroad for its use? The great trade in frozen meat and provisions also, which has been so profitable both to the Colonies and ourselves, owes its origin and maintenance to the exportation of refrigerating machinery. Almost the whole range of commerce could be reviewed on similar lines, but I have surely said enough to satisfy any inquiring mind that the machinery we export not only provides profitable work in constructing it for a large number of British engineering factories, but brings back, as the result of its use abroad, a great wealth of trade into this country. The question of textile machinery admits of some qualification, and this is probably what Mr. Balfour had in mind. Even there, however, if space permitted, a case could be presented in favour of these exports.

The Machinery and Engineering Trades Before and After Free Trade Times.

It is perfectly true that the locomotive and the marine engine were brought into existence before the advent of Free Trade, and their united agency has undoubtedly been the greatest factor of modern times in developing the commerce of the world. But there is something more to be said.

It is contended by some that our prosperity (outside that from our great national asset represented by our coal resources) was entirely made "in the early nineteenth century by the products of British inventions applied to textile manufacture, principally cotton, and in the middle of the nineteenth century by the further products of British invention (engineering and metallurgical) principally applied to the manufacture of iron and steel." [1]

The writer whose remarks I have just quoted, and those who take a similar view, miss an important point. They overlook the great impetus which was given to the industries of the country by the widening of our markets and the increased foreign traffic which, as I have already pointed out, took place as a direct result of the Free Trade system. Locomotives and steamships are of little use unless there is interchange of trade, and a policy of restriction curtails their value. The truth, as regards this part of the controversy, appears to be

[1] Letter to editor of London daily paper, August 14, 1903.

that the removal of commercial restrictions greatly stimulated the machinery and engineering trades (and other industries at the same time), but on the other hand the benefits of Free Trade could not have been realised without machinery and the inventions of the engineer.

Glancing at the history of these trades, before and after Free Trade times, we shall be able to see how these two great influences, the one political and the other mechanical, acted and reacted one on the other, and together built up the national prosperity.

The machinery and engineering trades may be said to date their commencement as a separate industry from the birth of the railway system and of the steamboat service, which events happened almost simultaneously. The fortunes of these three branches of industry are interdependent, and the growth of the machinery trade can be most effectively traced by following the development of railways and steamships. In the early part of last century the construction of machinery was noticeable for its strength and substantiality, but in other respects it can only be described as blacksmith's work. An inspection of the wheels and other parts of the valuable relic—"Locomotion No. 1"—for instance, affords interesting suggestions of the rough-and-ready means employed by the mechanics of those days. As the demand grew, and educated minds gave their attention to this branch of work, improvements rapidly multiplied, and by the time

of the great Exhibition of 1851 the construction of machinery had become established on scientific lines.

Railway engineering.—The first great event in the history of this branch of engineering was the opening of the Stockton and Darlington line, which took place in September, 1825, *i.e.*, twenty-one years prior to the repeal of the Corn Laws. This was the first railway in the world to convey passenger traffic. The success of that line attracted the attention of commercial men, and the further success which followed the opening of the Liverpool and Manchester Railway in 1830 formed the prelude to a rapid extension of the new means of transit. Evidence of the progress made by the machinery trade may be gathered from a record of the time, which mentions that at the ceremony of opening the latter line on September 15, 1830, eight locomotive engines made by Messrs. Stephenson at Newcastle started in succession drawing 28 carriages, capable of carrying about 600 passengers. On the following day one of the engines drew 130 passengers the 31 miles from Liverpool to Manchester in 1 hour and 50 minutes, showing that an excellent standard of workmanship and design had been attained. The excitement induced by these accomplishments and the possibilities of money-making opened up thereby led to a great deal of premature speculation, eventuating in what is known as the "railway mania" of 1835–7. To correct this, certain restrictions were introduced in the parliamentary

session of 1837 to check the facility of obtaining Railway Acts. Owing to this, and to the fact that so many people had "burnt their fingers" by immature investments, only five new lines were produced in in the years 1838 and 1839. During the three years 1835–7, Acts had been passed for no less than 50 new lines, aggregating upwards of 1,600 miles.

A fresh outburst of speculative activity occurred in 1844. Parliamentary sanction was obtained in that year for 26 new railways or extensions of existing lines, totalling 797 miles and involving a total capital of nearly £15,000,000. At the end of 1850, 6,621 miles of railway line had been constructed in the United Kingdom.

The recital of these brief historical reminiscences enables the position of affairs to be indicated so far as our railway system was concerned at the beginning of the Free Trade Era. Is there any room to question its prosperity since that time? The mileage in the United Kingdom is treble that of 50 years earlier, and the capital paid up has grown from £240,270,745 in 1850 to £1,176,001,890 in 1900. The following comparative figures will assist in making the point clear :—

Miles Open.	Average Receipts per Mile.	No. of Passengers.	Total Traffic Receipts.
		1850.[1]	
6,621	£2,328	66,840,175	£12,407,852
		1901.[2]	
22,078	£4,511	1,174,275,036	£99,595,434

[1] Knight's "Cyclopædia," 1851. [2] Whittaker, 1903.

The number of persons employed in working the railways of the United Kingdom in 1901 was 575,834. The extent to which railways give direct employment to the machinery and engineering trades may be realised by glancing at the following statement of rolling stock in use at the close of 1901, namely :—

21,714 locomotive engines ;
48,851 passengers' conveyances ;
19,065 other vehicles attached to passenger trains ;
697,683 waggons for goods traffic ;
18,407 miscellaneous vehicles.

These figures speak for themselves. Indirectly, the machinery and engineering trades profit in many other ways from railway enterprise. This is obvious when it is considered how much money is spent in the purchase, not only of rolling stock, but also of bridge-work, rails, and engineering plant of almost every description for excavation, lifting, pumping, building, and so on.

Marine engineering.—For the beginnings of this we have to turn back to the year 1813, when a little boat named the *Comet*, of about twenty-five tons, and worked by a 3-horse-power engine, was started on the Firth of Clyde by Mr. Henry Bell. This was the first steamboat for passenger traffic permanently established in British waters. In 1818 Mr. David Napier directed his attention to the improvement of steam navigation, and we are indebted to him for introducing

steam-vessels for deep-sea communication and for the establishment of post-office steam-packets. Amongst early historical vessels was the *Rob Roy*, which plied between Greenock and Belfast, about ninety tons burden, fitted with engines of 30 horse-power, built in 1818 by Mr. William Denny, of Dumbarton. The s.s. *Talbot* (120 tons) followed, built by Mr. Wood for Mr. Napier, and fitted with two of Napier's engines, each of 30 horse-power. This was the first steam vessel that plied between Holyhead and Dublin. A line of steamships was established about the same time between Liverpool, Greenock, and Glasgow. Advances continued to be made, and in 1838 the s.s. *Sirius* and s.s. *Great Western* made their successful passages across the Atlantic. The former completed the voyage from Cork to New York in nineteen days (April 4th to April 23rd), and the latter from Bristol to New York in fifteen days (April 8th to April 23rd). It is interesting to find that the s.s. *Great Western* made seventy voyages across the Atlantic, covering a total of 256,000 miles. The average speed on the outward journeys was 9½ miles, and on the homeward 11¼ miles per hour. Her shortest outward passage was 12 days 18 hours, and the longest (in stormy weather) 22 days 6 hours. The greatest number of passengers taken at once was 152.

Results which an industrial writer in 1845 described as "mighty exploits" we now look back

upon as mere preliminaries. The figures which follow will indicate the developments which have taken place in this department during Free Trade times.

The steamships registered at all the ports in the United Kingdom on December 31, 1850 (according to Knight's "Cyclopædia," published in 1851) were :—

	Vessels.	Tons.
Steamships under 50 tons	520	12,885
„ 50 tons and above	658	154,327
Totals	1,178	167,212

"Lloyds' Register of British and Foreign Shipping" for 1902–3 gives the following recent figures :—

	Vessels.	Gross Tons.
Steamships 100 tons and upwards	7,358	12,897,592

The total tonnage of both sailing and steam vessels has increased during Free Trade times from 3,360,935 to 14,431,672. (The latter figures do not include shipping owned by the Colonies.) Our gross tonnage was greater in 1902 than ever before, and 53 per cent. of the world's steam tonnage is owned by Great Britain, notwithstanding the strenuous efforts of Germany and other nations to rival us. It need only be added that the marine engineering branch of our machinery industries has prospered in a similar ratio.

Progress of Invention.—The progress of invention is to a certain extent outside political influences (the operation of the patent laws always excepted, and I shall have something to say on this subject later on), but it deserves to be pointed out that the system of world-wide commerce directly resulting from the fiscal policy adopted fifty years ago, has provided engineers and inventors with an enlarged experience without which they could not have achieved an equal amount of success. It will consequently be fair to admit that the Free Trade system has had a material influence on the progress of invention.

The last fifty years have witnessed the following amongst other advances in marine engineering and shipbuilding practice : The substitution of iron for the hulls of vessels instead of wood—the s.s. *Persia* in 1856 was the first Cunard iron paddle steamer—and the displacement of iron by steel, the first ocean steamer to be so built being the s.s. *Rotomohana* in 1879. Screws have almost entirely superseded paddles for propulsion, and twin screws, which were first used on an ocean express in 1888, are now very frequently adopted. The invention of steam steering gear has rendered the management of the vessels easy and has enabled the size to be increased almost without limit. Great relative economies in fuel consumption have been effected by the introduction of compound, triple, quadruple, or even quintuple cylinder condensing

engines. These and other improvements in engine and boiler construction have enabled power to be obtained from modern machinery at the approximate rate of one indicated horse-power for each pound of coal burnt. In 1838 the consumption was 6½ lbs. for each horse-power per hour.[1] A striking result of this inventive progress is that whereas the average freight on corn imported into this country was 6s. 5d. per quarter in 1872, it was made possible to reduce this to 3s. 6d. per quarter in 1900. The turbine engine now coming into use for large vessels, and which has given a speed of 36·581 knots, or nearly 42 statute miles an hour on torpedo craft, and the water-tube boiler for marine use, mark the latest phases of development in our marine engineering practice.

Present Position.

The latest Official Returns issued by the Chief Inspector of Factories and Workshops (Supplement to Annual Report for 1900 Cd 841) state that 404,412 persons were employed in factories manufacturing machines, engines, and electrical engineering appliances. Compared with the Returns for 1897 (three years previously) this shows an increase of 16,318 persons. Obviously the machinery trade is growing. The official returns of our machinery exports already quoted, bear further testimony to

[1] "Steamships and their Machinery," by J. W. C. Haldane, p. 375.

this, allowing for fluctuations of a special or temporary character. On a careful reckoning I suppose that the number of persons employed in the machinery and engineering industry fifty years ago would be somewhere about 20,000. From this it would appear that under Free Trade conditions employment has been provided for twenty times the number of workers in this branch of trade.

In discussing any suggestions for changing our fiscal policy, it is a matter of grave national concern that the probable effect upon the machinery and engineering trades and upon the large section of our population dependent on them should have special consideration. They rank as the greatest of our manufacturing industries at the present time. Their productions are unquestionably the most important because every department of commerce is dependent nowadays upon machinery for its existence. Wage-earners are more extensively interested in the prosperity of these trades than any other, the textile industries not even excepted. For whilst in 1890 there were 1,036,570 hands employed in the whole of the textile trades of the United Kingdom (cotton, woollen, silk, shoddy, flax, &c.), of these only 290,797 were "males above 18 years of age," the remainder being women and children. In the section of the machinery and engineering trades, which finds employment for the 404,000 hands referred to above, 342,000 were "males above 18 years of age," and they represent the most highly

paid of the wage-earning classes. The number mentioned is probably an under-estimate, because some of those engaged in the manufacture of gas-holders, boilers, ordnance, agricultural implements, &c., might properly be included in the machinery and engineering trades.

I have, however, taken the official figures as they occur to represent the number belonging to the trade under survey. Reckoning an average, then, of £60 per annum for each of the 404,412 persons engaged in manufacturing machines, engines, and electrical machinery, I estimate that over £24,000,000 is distributed annually in wages by the machinery and engineering trades. On this basis it may further be assumed that the total annual turnover in this department of our commerce is approximately £72,000,000. Of the wages item, one-fourth—say, £6,000,000 per annum—must be credited to our machinery export trade, and the latter may be reckoned to provide constant employment for some 100,000 workmen of the better class. A further relative idea of the importance of the machinery and engineering trades will be gathered from the statement that the Amalgamated Society of Engineers numbers more than 95,000 members. This is greater than that of any other factory trades union in this country.

Effect of Taxing Food.

I have elsewhere pointed out, in articles published

in the *Manchester Guardian* (August 15 and 18, 1903), that a permanent increase in the cost of food, such as has been foreshadowed, would either reduce the purchasing power of the pound sterling to something like 18s., or, if workpeople are to be paid an increased wage of 2s. or 3s. per week, as has been hinted, the consequence will be that the cost of manufacturing machinery will be increased about 10 per cent. all round. To meet this, manufacturers will be compelled to advance their prices to a corresponding extent, and will thus be 10 per cent. less able to compete against the United States, Germany, and other countries than they are at present. We shall certainly lose a portion of our machinery export trade to foreign countries, as a consequence, and no compensating increase can be looked for from the Colonies. In both Canada and Australia there are legislative enactments passed or proposed, requiring that no patent shall be valid within their borders unless the machinery or speciality is manufactured in the Colony within five years—a significant indication of their determination to cultivate a manufacturing trade of their own. A certain effect of permanently increasing the cost of manufacture will be to curtail the demand for machinery, and to throw numbers of skilled workers out of employment. The latter will probably find their way to America and increase the ranks of our competitors. Enterprise will be checked, because more capital will be needed than

at present to start new factories and to replace antiquated plant with what is newest and up to date. We shall, in various ways, play directly into the hands of our foreign rivals by diminishing the advantage we at present possess in competing for orders in neutral markets as well as at home. In short, unless it can be shown with certainty that our volume of trade can be maintained under fresh fiscal conditions and an increased price obtained for our machinery, the policy of taxing food will result in wiping out or greatly diminishing our manufacturers' profits and reducing wages.

Imports of Machinery.

One of the objections urged against our Free Trade policy is that it permits, and to a certain extent encourages, the importation of machinery from other countries, thus diverting work (as is supposed) from our factories to those of other nations. The value of these imports last year was £4,760,651—a large item. The question has been asked whether here is not a proper place for the imposition of some restrictive tariff. To answer this in a business-like manner it is necessary to examine these imports carefully, in order to ascertain what the machinery is and for what purpose it is bought. In this way we shall get to the bottom of the matter, and we shall find it much easier to come to a satisfactory conclusion.

It will be found that under existing circumstances

it is a decided advantage to our trade and also to our machinery makers that these imports should be freely permitted. What these circumstances are and what steps should be taken to obviate the necessity for continuing these imports are questions which rightly demand ulterior consideration. The point of paramount importance is that our industries shall be equipped with the very best and most efficient machinery to be had. If our competitors in the United States of America or in Germany possess a machine which will do better work or turn out larger quantities at a cheaper cost, it is manifestly better for us as a matter of business to get hold of that same machine rather than allow our rivals to retain the sole advantage of it. To mention a specific example, our engineering trade owes to the United States of America the system of working with Milling machines. These tools have revolutionised the practice of our machine shops, enabling the work to be turned out much more expeditiously and cheaply than could previously be done. Had we discouraged the importation of these tools and doggedly held to the old system of doing everything by shapers, slotters, and planing machines, we should simply have allowed American engineers to beat us with ease in the production of almost every kind of machinery, in spite of their higher wages.

The "Turning and Boring mill" is another instance of a similar kind. This machine gives

an advantage of six to one as compared with the ordinary self-acting surfacing lathe for doing certain classes of work, and this also was originally an importation from America. It is satisfactory to be able to state from experience that when imported machinery is found of sufficient merit to lead to a continued demand for it, the trade is presently taken up by our own makers. First-class Milling machines and other tools (originally of American design), including the Turning and Boring mill just named, have been extensively and systematically produced for many years past by British engineers, with the advantage added to their utility that they are constructed of better material and higher finish. Their importation has practically ceased. It can be confidently stated that under present conditions it is impossible for foreign engineering firms to compete successfully in our own market for any length of time in any standard or competitive item of machinery. In proof of this we can point to the establishment in this country of the large works of the Singer Manufacturing Company at Kilbowie, near Glasgow; of the British Westinghouse Electric and Manufacturing Company, Limited, at Trafford Park, Manchester; the British Thomson-Houston Company, Limited, at Rugby; and others which could be mentioned. The works just named give employment in the aggregate to thousands of hands, and their introduction here from pioneer establishments in the States has materially increased

our industries, so that we are ultimately the gainers all round by this import trade. The official figures I quote elsewhere substantiate this, for notwithstanding foreign imports the actual number of workpeople employed in our machinery and engineering trades has increased during recent years.

The consideration of this matter can be pursued further with advantage. Let us bear in mind that we have no monopoly of inventive ability. By keeping our markets open we induce inventors to come to us at once with every invention of value, and we promptly reap the benefit of experiments which have been carried out in the United States of America or other parts of the world under conditions from which our makers are excluded. It also pays us better to buy machinery from abroad so long as it is in an experimental or transition stage rather than invest capital in an immature trade. This remark leads to an explanation why a large amount of electrical machinery and plant has been imported into this country during the last few years. The reason is that the demand for better and more expeditious tramway facilities came upon our engineers before they were prepared to supply suitable plant. American firms were in a position to do this earlier than we were, because the laying down of tramways in the United States proceeds at a pace we know nothing of in this country, owing to the extensive emigration and immigration which is always going on there. What happens is this : when

a new township or district is opened up, the first operation of the land speculator is to lay down a tram-line, instal the electric light, and start a newspaper. He then advertises the place, and the population generally arrives later. (I quote these facts on the authority of an extensive land agent, whose acquaintance I made when on a visit to the States.) The constructors of these tram-lines were not hampered by having to wait until a thoroughly matured design of machinery was forthcoming, as was the case in this country, so that American engineers had no lack of opportunities for experimental work. It is no disparagement to our people, therefore, under the circumstances, that they were not first in the field. The production of electrical machinery is now a comparatively settled trade in consequence of tramway and railway companies in this country electrifying their lines to so great an extent, and our engineers are rapidly adapting and increasing their works to supply the growing demand. Orders which a short time ago would have had to go out of the country are now executed by British firms. Proof of this satisfactory result is evidenced in the official returns, which show that whereas in 1900 we imported electrical goods from the United States of America to the value of £832,801, the amount in 1902 had fallen to £159,601.

Much more might be said in connection with this part of the subject. The advantages might

be instanced which have accrued to our cycle and motor industries through the importation of special tools ; the benefit to the Press of the country by the introduction of American fast printing machinery ; the increase of cheap literature ; the production of trade publications and business catalogues in better style and at a lower cost, made possible by availing ourselves of the improved printing machinery sent into this country from abroad. All these are points in favour of our Free Trade system. It is scarcely necessary, however, for the purpose of this paper to do more than make passing mention of them.

Some direct evidence giving the reason why certain classes of machinery are imported will be in place here. The following extracts are taken from communications I have recently received from several well-known firms in this country importing and selling American and German machinery. In reply to questions, one of these firms writes :—

"People in this country buy the American machinery and tools which we handle not because they are cheaper than English, but because they really supply wants that are not met by machinery and tools made in this country. As a general rule, the American tools which we handle have no competitive lines in this country—they do work for which no machines are made by tool-makers in this country. We may add that some

articles which we handle are sold at a very much lower price in this country than in the United States."

Another firm says :—

"What enables us successfully to compete with home manufacturers in machine tools is the superiority of the machines we sell. The special points of advantage consist of ease of handling, account of output, specialised design, accuracy of construction, and quality of finish. Our prices are high now compared with similar English tools, but first cost is a minor consideration when the equipment for industrial competition is concerned. Efficiency is the thing that must be studied, and in machine tools, more than anything else, 'the best is the cheapest in the end.'"

Reference has been made to the importation of printing machinery, which, it may be remarked, accounts for a considerable item in our machinery imports. In this department of engineering the German people occupy a very strong position. Their success is undoubtedly due in a substantial measure to the ingenuity and general excellence of this class of machinery which they turn out, including high capacity of output and quality of work. Responding to questions on this subject, a firm importing continental printing machinery, writes :—

"The progress of printing, both as regards quality and variety, came earlier both in America and

Germany than in Great Britain, leading to the demand for and supply of a class of printing machines capable of producing varied and superior work. Later on the example of the foreign printer awakened the spirit of emulation in his British *confrère*, who, finding no British-made machines adapted for these new classes of letterpress work, naturally welcomed the foreign production. Hence German machinery is purchased by British printers on account of its superiority, *i.e.*, its adaptability for the production of good present-day printing, which requires machinery of greater capacity than in the past—capacity for better inking, more powerful impression, and an increase of labour-saving qualities generally. Take, for instance, the Phœnix platen, which has now been on the market for about ten years. When first manufactured this machine was a grand one, but scarcely a year has since passed without some improvement having been made in it, and it stands to-day as the most practical platen-printing machine in the world. For printing half-tone, three-colour, &c., for embossing, for box-making, &c., no machine excels it; whereas the British platens remain very much where they were thirty years ago, capable of printing light formes of type work, but of little use for the exacting varieties of printing now demanded. The German machines are superior in strength and adaptability, in finish, and in detail. They are accurate and quiet in motion. They produce a

larger quantity of good work. They do not compete with other machines in point of cheapness, although they are reasonable in price, but on account of their superiority."

These are fair points of competition, and our true policy is to better them. To ask for a fiscal system which should shut out this machinery from our market would be childish. The genius of the British people is assuredly against the adoption of a policy which would be as futile and undignified as that of the ostrich.

Notwithstanding these explanations, the growth of the imports of foreign machinery is certainly not to be regarded as a satisfactory feature. We justly pride ourselves as a nation on our engineering capabilities, and our true course is, when we discover a weak point, to trace the cause and apply the proper remedy. It is certain that "Protection," or a restrictive tariff, will be no substitute for lack of enterprise or inventiveness.

An Effect of the Engineering Strike.—The machinery import trade increased very largely after the great engineering strike of 1897. At that time, it will be vividly remembered, a great many shops were practically shut up for about six months, and many British firms being unable to execute orders, tools were imported from America and Germany to supply urgent requirements. Travellers were sent over here from abroad in great numbers to reap the unusual harvest. Sale-rooms were opened, and a

connection was established which has not only been held with a firm grip ever since, but has been extended. It is worth while remarking that if foreign tools had not been available, the disturbance to our shipbuilding and other industries would have been much more serious and the loss to the trade of the country far greater than it was.

The following figures show the value of machinery, &c., imported into Great Britain from the United States and Germany respectively in alternate years since our great engineering stoppage :—[1]

U.S.A.	1898. £	1900. £	1902. £
Machinery in general ...	2,017,386	2,261,624	2,161,266
Sewing machines	135,801	103,959	180,022
Electrical goods[3]	- -	832,801	159,601
Implements and tools[3] ...	—	364,353	304,723
Steam engines[3]	—	—	374,972
Agricultural[3]	—	—	268,819
Germany.			
Machinery in general[2] ...	213,923	280,780	612,010
Machinery and millwork[2]	120,383	130,398	151,354
Electrical goods[3]	—	86,951	81,759
Total	£2,487,493	£4,060,866	£4,294,526

Out of evil sometimes arises good. One effect of the "invasion" has been the introduction into this country of a number of ingenious and valu-

[1] Table specially compiled from official sources for the *Manchester Guardian*, August 18, 1903.

[2] These items are separated in this way in the returns, commencing with the year 1898. The reason for the classification adopted in the official returns is not clear.

[3] These items are not shown separately in the returns until recent years.

able labour-saving tools, which has led our own engineering firms to re-design some of their machinery. The result is that we now have more effective and better tools, of which the industries of the country are reaping the benefit. Some of these are known as "Anglo-American," combining the ingenious devices of the American type with the better finish and greater durability of the British-made tool.

How are We to Meet Altered Conditions?

When all has been said or written in substantiation of the benefits conferred by Free Trade upon our national commerce, I am sensible of the fact that many persons will reply, "What you say is all very well—Free Trade has no doubt served a good turn in the past, but we have to consider the future, and must deal with a new set of conditions that our fathers knew nothing of. How are we to meet the altered state of affairs, especially as regards foreign competition?" I venture to think the answer to this question is, that seeing we cannot forcibly alter the economic policy of other nations without encountering the risks of war—either military, naval, or commercial war—our proper course is to remedy the shortcomings that hamper us in other directions. As a business man with thirty years' experience in this particular branch I am convinced that our machinery and engineering trades will have nothing to fear for the future if

we carry out the reforms within our reach. Let us see what can be done in reducing national expenditure and waste, lowering manufacturing costs, increasing the efficiency of the worker, improving the excellence and suitability of our goods, and adopting better methods of selling and conducting business generally. Is perfection reached yet in these matters? With possibilities of great improvements in railway and transit matters, patent laws, labour exchanges, technical and commercial education, consular service, international postage, and with scope for the further cultivation of international comity, national sobriety, and conscientiousness, it is no time for us to stand still and rail at the world because other nations will not let us have all our own way.

Certainly, if the whole world had been content to allow Great Britain to remain the sole manufacturing country, our trade would be very much greater than it is. But our population and manufacturing capacities are entirely inadequate to supply the machinery and engineering plant needed all over the globe, and it has therefore been inevitable that other countries should manufacture on their own account. Moreover, our makers have often failed to supply the machinery and tools best suited to the conditions of foreign countries, and have thus indirectly fostered local trade.

When considering the difficulties we have to encounter in fighting foreign tariffs, do not let

us forget that our competitors also have their troubles. Manufacturers and traders of the United States of America have a serious and ominous labour problem in front of them. They are also fettered with higher wages and heavier living expenses, longer inland transit distances, and smaller shipping facilities. Some of these disabilities we escape. In this connection it is interesting to quote the remarks of Mr. George N. Barnes, who visited the States last year as a representative of the Amalgamated Society of Engineers on the "Mosely Industrial Commission." In his report he makes the following comments as the result of his inquiry into the state of the engineering trades there :—

"I do not take a pessimistic view of the British engineering industry, provided it is given a fair chance. It is true that American exports of engines and machinery have increased enormously during the last few years, but it is also true that the exports of similar British engineering products have also increased, and that we still export nearly double the value of the American exports in a given time The figures taken together simply show that the world's demand has increased, and that, not unnaturally, that demand has largely gone to those countries still in the first flush and bound of industrial expansion. But qualitative considerations will assert themselves, and from the point of view of quality I feel quite sure that British goods have

nothing to fear, provided that British designers are encouraged. Moreover, it is reasonable to expect that Americans will continue to an increasing extent to develop a desire for leisure in which to enjoy some of the pleasures and amenities of life, and to attend to communal needs in regard to which they are far behind us. The hours of labour have been reduced by three per normal week during the last three years, and I believe that the time is ripe for a further reduction. Even employers told me that they were quite willing to adopt shorter hours, and all that was needed was a common agreement.

"Americans have, of course, natural and other advantages over us. But, on the other hand, we have social advantages over Americans in the form of good roads, trained hands, and all the accumulated accessories of civilisation which are relatively lacking in newer communities.

"Is there anything in American practice which we might copy with advantage? I believe there is. I believe that, while retaining our own superior characteristics of thoroughness, and while continuing to have regard for certain standards of life and conduct, we might, nevertheless, follow the lead of the Americans in encouraging inventiveness and initiative, in fully utilising machinery; and, perhaps, in organising industry on a larger, and therefore cheaper, scale. If these things are done I have no fear but that British engineering will hold its own, without sacrifice of national or individual pride in

good work, or of the general welfare of the worker."

Amongst other points to which Mr. Barnes has not alluded, and upon which the future success of our engineering trade more or less depends, may be named the extended adoption of standardising parts; Specialisation; Systematic arrangement of factories to save costs in handling and turning out finished goods; use of the metric system and greater enterprise in the selling department. It is satisfactory to be able to say that in nearly every one of these matters there is a movement in the right direction. Much money is being spent, and valuable work is being quietly done in the way of reorganising our engineering factories. The position of our makers is growing stronger day by day owing to this, and in the course of the next few years very remarkable progress will be in evidence as the result.

The Importance of the Patent Laws.

The greater inventive activity of the United States of America is a frequent subject of remark, and we shall do well to study the reasons for this. It would be difficult to exaggerate the importance of this point, for it can be laid down as a fixed proposition that the nation which possesses the most efficient labour-saving machines will, all other things being equal, win the race in the long run. "The prosperity of England," said the late Sir

Joseph Whitworth (as did Adam Smith in effect a century earlier), "depends not only on the produce of her soil and mines, but also greatly on the number of self-acting machines she keeps at work; in proportion to the increase in the latter (he adds) has been her increase in wealth and power."

Free Trade has given us the advantages of cheap food supplies and a comparatively low wage rate, both of which are essential elements to our manufacturers' success. But we have sinned as a nation by forgetting that there are other conditions necessary to maintain our prosperity in competition with the world at large. We have been flagrantly guilty in the past of suppressing the inventive ability of our people and neglecting the training of their minds. Our Free Trade policy has never after all been completely carried out, for to this day we unduly tax our inventors instead of encouraging them, and thus perpetuate the evils of Protection in a matter of vital importance. So long as this system is allowed to continue we must expect to be as dependent upon America for improvements as we are now.

The United States of America adopted the policy a great many years ago of encouraging invention to the utmost. In this respect they are the true Free Traders, and the commercial progress they have made, in spite of heavy protective duties and other disadvantages, is largely traceable thereto. This

policy was forced upon the American people owing to their being handicapped by higher wages and long distances of transit between mines, factories, and consumers; and it has done great things in the way of compensating them for these drawbacks. In the States inventors pay only $35 (£7) for seventeen years' patent right, and at the same time, so thorough a system of examination is provided that an American patent is generally recognised as a reliable legal property.

Until recent years our English patent laws were based upon the mistaken notion that a patent was a "monopoly" more or less of the same objectionable character as the trading privileges granted in the reign of Queen Elizabeth. Our statesmen assumed that they were therefore a danger to trade which must only be permitted under the penalty of a heavy tax. The amended patent law introduced in 1852 went a considerable way towards recognising the right of an inventor to legal property in his own ideas, but the "tax upon brains," as it has been aptly termed, remained a heavy one, and tended to restrict inventions to the very limited number of people who could afford to pay the fees. The total stamp duties payable under the Act of 1852 was £175 for fourteen years, £25 of which had to be paid on the granting of the patent, £50 at the end of the third year, and £100 at the end of the seventh year. In 1883 an important reform in the law was fortunately carried through Parliament.

That we were making a very costly national mistake in continuing such high restrictive taxes, and that we were missing valuable opportunities for the improvement of our industries, was impressed upon the mind of the writer in 1879 by a remark made to him in conversation with a workman from the States. "How is it," the latter was asked, "you are so inventive in the States?" "Well, you see," was the reply, "a patent can be obtained so cheaply in America, nearly everybody tries to invent something." This remark suggested food for thought, and led the writer to persistently urge the importance of the subject upon the attention of engineers through the technical press. Influential men in the engineering profession took the matter up and insistently demanded a reduction of the fees. As Fulton says, in dealing with the history of patent law, "this agitation gathered force as years went on, and finally resulted in the passing of the Act of 1883."[1]

The writer had the satisfaction of knowing that his efforts were of substantial assistance in securing this reform. He was honoured by receiving from Mr. Chamberlain, who was then President of the Board of Trade (and who was instrumental in carrying through the Act), a letter dated 8th November 1880, conveying the first public intima-

[1] "A Practical Treatise on Patents, Trade Marks, and Designs." By David Fulton, A.M.Inst.C.E.

tion that the Government intended to introduce a Bill to amend the law.

As a result of alterations in the law the fees for a British patent have been reduced to a total of £95 for the full term of fourteen years. As only £4 of this has now to be paid on obtaining a complete patent, the relief is a substantial one, especially as the remaining fees are spread fairly evenly over the last eleven years. The ground of complaint, however, still remains, that our patent laws are too much of a rich man's privilege, instead of being based on the principle that inventive ideas are common to all, and that it is to the interest of the State to remove every obstacle to their production. A fee of £1 on application, £1 on sealing the patent, and a small charge thereafter sufficient to cover the costs of the Patent Office, should be all that is required. I would further suggest that the Government should put the whole matter through free of all other charges to the applicant in every case of an accepted patent.

It will be useful to refer here to a few figures showing the operation of these laws. The total number of patents sealed from the date of passing the Statute of Monopolies in 1623 down to the Act of 1852 was 13,651. The greatest number of applications for patents in any one year under the operation of the last-named Act was 6,241 in the year 1882. In 1884 the number had risen to

17,110, showing that an immediate stimulus was effected by the Act of 1883. In 1893 the number had further increased to 25,107, and last year (1902) the number was 28,976.[1] By far the largest proportion of these applications are for mechanical improvements. In the United States of America the number of applications was 52,000 in 1901, of which 35,000 matured into patents.

Railway and Transit Disabilities.

Another matter which affects the prosperity of our industries and handicaps them in competing with foreign countries is our high prevailing railway rates and costs of transit. Both in Germany and the United States the railway mileage rates are very much cheaper than in this country, and we are behind them in this respect. Canal traffic also has been to a great extent crippled by the monopolising action of our railway companies. We have the strange anomaly of seeing in this country preferential railway rates given to the produce of foreign countries, to the discouragement of our own agricultural and other industries. The question whether a system of State ownership of railways should be adopted somewhat on the lines of that in operation in Germany deserves immediate attention. It is certain that a national "transport policy" is a matter of urgency with us.

[1] See Report for 1902 of the Comptroller-General of Patents, &c.

The Right Hon. George Wyndham indicated that the subject is one which commended itself to his judgment, and the proposal which a writer in the *Times* has put forward with regard to this, is also a step in the right direction. If such a policy were carried out in a thorough and efficient way, and a scheme of rates fixed for the benefit of the country at large, instead of for a comparatively small number of shareholders, our industrial position would be enormously strengthened, and the boon would be one of far-reaching importance, in which all would share, the machinery and engineering trades no less than others. The time is now ripe for something of this sort to be done.

THE FUTURE OUTLOOK.

It is difficult to place any limit upon the demand of the future for machinery and engineering plant. The world at large is only beginning to appreciate its value, and I am convinced therefore we shall make a grievous error if we do not maintain our policy of cultivating an unrestricted foreign trade as well as pushing our colonial connection for all it is worth. It does not seem to me unreasonable to assume that our machinery export trade, if properly cultivated, will reach the annual value of £100,000,000 within the next fifty years, instead of about £20,000,000 as at present. If we handicap ourselves, however, with dearer food and higher

manufacturing expenses, we shall risk our prospect of expanding this trade.

Where, it will be asked, is this huge future trade to come from? The answer is, that great future developments can be counted on with certainty. They are already taking place. It may be safely inferred that nothing short of a universal cataclysm can prevent the ultimate covering of the vast Continents of Asia, Africa, and South America with a network of railways equal at least in extent to that of the United States and Europe, at the present time. Can there be any doubt of this in face of the constant increase in the world's population and the rapid absorption of uncultivated territory by the white man? Amongst great schemes now in progress or projected, which will increase business for the engineering trade, may be mentioned the completion of the Panama Canal; the Cape to Cairo Railway; the Trans-Siberian Railway; the Trans-Continental Australian Railway; and the Indo-European Railway. Whether Great Britain supplies the machinery and material or not for these enterprises the benefit is certain to be felt by our shipping trade, in which, thanks to our Free Trade system, we are supreme. More and faster steamships will be required to meet the growth of the world's commerce, and the same experience of enlarging harbours and docks to provide for the 20,000-ton vessels of the future will be repeated, but on a larger scale.

Apropos of this part of the subject, I quote the following from the presidential address of Sir David Dale, delivered a few years ago before the Iron and Steel Institute.[1] There is probably no man in the country entitled to speak with greater authority on business matters in this department of trade :—

"We cannot doubt that in the future, fields of enterprise in the direction of railway construction will be opened out enormously in excess of what we have seen in the past. In 1892 the whole of Asia possessed only the insignificant extent of 23,229 miles of railway, of which 17,768 were in British India. This last figure, however, only amounts to 1·1 miles per 100 square miles of area, as against 16·7 in our own country, and 29·6 in Belgium.

"In Africa only 7,212 miles of railway had as yet been constructed, and to that continent many eyes are turned in the hope and expectation that the splendid energy and indomitable perseverance shown by our fellow-countrymen on that great undeveloped continent will find their reward, not only in opening out new markets for our manufactures, but in bringing civilisation and enlightenment into many of the dark places of the earth.

"In our Australasian Colonies there were as yet only 12,685 miles of rail, amounting to but ·3 of a mile to each 100 square miles of area. In this part of the Empire we are told that 'many

[1] "Journal of the Iron and Steel Institute," 1895.

important schemes of development are at present projected . . . and it is probable that large developments . . . will take place before long.'[1]

"The vast empire of China, which boasts an area of nearly 4½ millions of square miles, or nearly one-twelfth of the land surface of the globe, and with a population probably amounting to 300,000,000, was at the date named content with the modest quota of 124 miles; whereas in Japan, which until comparatively recent years was almost as close and unknown a land as her vast neighbour, the railway mileage already amounted to 1,876."

In the comparatively short interval which has elapsed since these remarks were made, much has happened to justify the anticipations then put forward.

At home, new schemes for electric railways and tram-lines are rapidly coming forward, and a fresh batch of ship canals seems likely to be a feature of the near future. The motor industry with its possibilities is also before us. These all directly concern the engineering trade. The constant increase of facilities for travel and business intercourse can always be counted on as a potent factor in extending trade. In this connection the development of wireless telegraphy and the coming of the universal Penny Post, may be referred to. It would be easy to extend these remarks, and the theme is tempting. The purpose of this paper will, however,

[1] "British Iron Trade Report," 1893, p. 43.

have been already answered if I have succeeded in showing, as I have endeavoured to do, that not only have the machinery and engineering trades prospered under our Free Trade system, but that there is ample scope for their future expansion and a hopeful outlook for the future under existing fiscal conditions.

Experientia docet !

THE COAL TRADE [1]

By D. A. Thomas, M.A., M.P.

FEW British industries, if any, have made greater strides during the past fifty years than has that of the production of coal, and probably no one of our leading industries has derived so much help from the adoption by this country of a Free Trade policy. But how much of the progress has been due to our fiscal system, and how much should be attributed to other stimulating causes, it is difficult, if not impossible, to determine with any approach to precision. I confess, for my own part, to be quite unable to make even a reasonable guess, and certainly I cannot put forward anything that could properly be described as a well-considered estimate. Who shall say where the action and reaction of the various stimulants begins and ends, or what weight is to be apportioned, in each case, at any moment, to the multitude of ever-changing factors in this

[1] The statistics given in this chapter are taken from a paper read by the author before the Royal Statistical Society on May 19, 1903, entitled "The Growth and Direction of our Foreign Trade in Coal during the last Half-century." The reader who desires more detailed information on this subject is referred to the issue of the Society's Journal for Sept., 1903.

complex problem? I will therefore content myself with narrating the facts, and leave it to the reader to make his own apportionment, to draw his own conclusions as to the degree of influence that has been exercised by fiscal policy on the one hand, and by inventions and improved mechanical and commercial methods on the other, in producing the marvellous growth that has taken place in the period under review.

A.—*Statement showing the Growth in the Production and Export of Coal in and from the United Kingdom under Free Trade.*

	Production of Coal in the United Kingdom.	Export of Coal, Coke, and Patent Fuel, including Bunkers.	Percentage of Export to Production.	Remaining for Home Consumption.	Consumption per head of Population.	Total Value of all Exports.	Value of Coal Exports and Coal Bunkers.	Percentage of Coal Value to that of Total Exports.
	In million tons.	In million tons.	Per cent.	In million tons.	In tons.	In million £'s.	In million £'s.	Per cent.
1850	56·0[1]	3·8[2]	6·8	52·2	1·91	71·4	1·4	2·0
1860	80·0	8·4[2]	10·5	71·6	2·49	135·8	3·7	2·7
1870	110·4	14·1[2]	12·8	96·3	3·11	199·6	6·7	3·4
1880	147·0	23·9	16·3	123·1	3·56	223·0	10·8	4·8
1890	181·6	38·7	21·3	142·9	3·81	263·5	23·9	9·0
1900	225·2	58·4	25·9	166·8	4·08	291·2	48·3	16·6

From this statement it will be seen that our annual production of coal has quadrupled in the past fifty years, while the export, including coal shipped for the use of steamers engaged in the foreign trade, has

[1] Estimated. [2] Including estimated quantity of bunker coal.
[3] Bunker coal is estimated at the same average value per ton as exported coal.

grown fifteenfold. In value the export has increased from 2 per cent. in 1850, when the duty on coal was completely removed, until its reimposition a couple of years ago, to over 16 per cent. of our total exports in 1900.[1] It will further be noted that the quantity of coal remaining for home consumption more than doubled per head of the population during the period, and that the proportion of coal exported to the total production advanced from about 7 to over 25 per cent.

Coal in Other Countries.

But it is idle to suppose—and I write as a convinced Free Trader—that the case for or against any economic system can be regarded as proved by the mere concurrence or absence of industrial progress with the particular system, and in considering the benefit which to my mind has followed from the adoption of our present fiscal policy, in the special trade with which this essay deals, one cannot ignore the fact that a considerable percentage growth occurred in the output of coal in the United Kingdom in the first half of the nineteenth century, before the era of Free Trade, while under a high Protectionist regime, both the United States and Germany have in recent years made a greater actual increase in coal production than has this country.

[1] In April, 1901, an export duty to the amount of 1s. per ton was reimposed, but from August 14, 1850, to April 19, 1901, no export duty was levied upon coal.

The increase in the production of coal in various countries in recent years is shown in the following table :—

B.—*Statement showing the Growth in the World's Production of Coal during the past Three Decades.*

	Average Annual Increase of Coal Production, Short Tons of 2,000 lbs. (000's omitted.)			Actual Total Quantity in 1900.	Percentage Rate of Increase in Coal Production.		
	From 1870 to 1880.	From 1880 to 1890.	From 1890 to 1900.		Between 1870 and 1880.	Between 1880 and 1890.	Between 1890 and 1900.
United States	3,468	8,623	11,191	269,683	94	121	71
Great Britain	4,092	3,880	4,879	252,203	33	24	24
Germany [1]	2,769	3,322	6,641	164,805	74	51	67
France	682	741	806	36,812	47	35	28
Austria-Hungary [1] ...	711	1,401	1,269	43,011	77	86	42
Belgium	352	384	340	25,856	23	21	15
Russia	283	306	1,117	17,799	385	85	168
Japan	—	292 [2]	526	8,187	—	—	180
Spain	—	1,336 [2]	134	2,947	—	—	120
Italy [3]	9	26	11	530	137	170	27
India	1,000 [2]	144	244	6,853	—	144	189
Canada	1,425 [2]	143	312	5,322	—	119	71
New South Wales ...	67	179	274	6,168	69	109	80
New Zealand	336 [2]	38	51	1,225	—	142	72
Queensland	4	31	18	557	160	483	47
Other countries [4] ...	176	389	422	4,082	—	121	8
The world ...	12,611	19,896	28,235	846,040	53	55	51

These figures have been deduced from a table prepared by the Bureau of Statistics of the United States Treasury. They show that, great as has been the growth of the production in the United Kingdom during the past generation, that of the world at large has been more than twice as rapid.

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[1] Including lignite. The increase in coal alone in the ten years ending 1900 was 56 per cent. in Germany and 25 per cent. in Austria-Hungary.

[2] The total production in 1890, and not the increase over the decade.

[3] Mostly lignite.

[4] The Transvaal output, though below half a million in 1900, amounted to 2,136,000 in 1898, and has now again come up to its old rate prior to the war.

Let me say frankly that in my opinion natural forces, such as (1) the possession of abundant supplies of raw material, and more especially easy access to cheap fuel, (2) climate and (3) geographical position, exercise an immeasurably greater influence on the prosperity or otherwise of a country and on its foreign trade than any fiscal policy which man may vainly devise. All that Free Traders may fairly claim is that the system they advocate enables the country that adopts it to make, from the economic point of view, the best of its position, to emphasise any natural advantages it may possess, and to modify the effect of disadvantages. When Free Traders go beyond this and attribute the prosperity and progress which Great Britain has enjoyed and made during recent years entirely to our fiscal system, they unnecessarily lay themselves open to attack, and thereby weaken their case. Fiscal policy plays a subordinate part. The importance given to it in economic discussion arises from the fact that it is practically the only influence we can control. We can modify geographical conditions to a small extent by improved communication, but we cannot change the relative position of the United States, Canada, and the Mother Country any more than we can produce coal in Ireland, Sweden, or Italy. A Protectionist tariff is an attempt to forge weapons to fight conditions imposed by nature. A country so lavishly

endowed as is the United States with all that goes to make for material prosperity, could not fail to advance under any fiscal system when once her boundless resources came to be exploited. More than a generation ago Free Traders like Jevons foretold her rapid progress, and predicted that she would prove a formidable rival to Great Britain in the markets of the world. Germany, though less abundantly endowed, has great coalfields, and stimulated by the inventions and industrial developments of the past generation, and by the sacrifices large sections of her people have been ready to make for what they seem to have considered to be for the common good—she likewise has rapidly advanced.

The Importance of Cheap Fuel.

Of the natural forces I have indicated, the possession of cheap fuel is the most potent, and is in itself alone, in my judgment, a far more powerful factor in industrial progress than Free Trade or any possible fiscal system that can be devised. Abundant supplies of cheap coal are essential to any country aiming at commercial predominance, and under modern industrial conditions, the best index and measure of the material progress and prosperity of a nation is its consumption of coal. The following table will enable us to apply this test to the principal countries of the world :—

C.—*Statement*[1] *showing Quantity of Coal Remaining for Home Consumption per Head of the Population in the Principal Foreign Countries in* 1890 *and* 1900.

	United Kingdom.	United States.	Belgium.	German Empire.	France.
1890	3·87	2·27	2·68	1·30	0·91
1900	4·14	3·13	2·95	1·77	1·19
Increase ...	0·27	0·86	0·27	0·47	0·28

	Sweden.	Austrian Empire.	Spain.	Russian Empire.	Italy.	Japan.
1890	0·36	0·31	0·16	0·07	0·14	0·04
1900	0·66	0·40	0·25	0·15	0·15	0·09
Increase ...	0·30	0·09	0·09	0·08	0·01	0·05

D.—*Similar Statement*[2] *in respect to the Principal British Colonies and Possessions.*

	British India.	Canada.	New South Wales.	Victoria.	South Australia (*ex* Northern Territory).
1890	0·01	1·04	1·13	0·63	0·47
1900	0·02	1·50	1·58	0·69	1·14
Increase ...	0·01	0·46	0·45	0·06	0·67

	Tasmania.	New Zealand.	Cape of Good Hope.	Natal.	Queensland.
1890	0·54	1·07	—	0·15	0·72
1900	0·62	1·43	0·22	0·22	1·04
Increase ...	0·08	0·36	—	0·07	0·32

[1] Metric tons of 2,204 lbs. Exclusive of lignite, except in case of Russia and United States.

[2] Tons of 2,240 lbs.

It will be seen that though the United States and Germany both show greater increase than the United Kingdom during the past ten years in the per capita consumption of coal, they are still behind us, Germany very much so. In other words, while it must be admitted that our two most formidable rivals have gained on us in the industrial race during the past decade, we have the satisfaction of knowing that they are yet far from having caught us up.

Coal Prices and Other Prices.

There are, however, several considerations to which attention should be drawn if coal consumption be taken as the index of prosperity, and which must, I think, tend to qualify our satisfaction to some degree. One is that though the per capita quantity of coal retained in the United Kingdom for home consumption has more than doubled in the last fifty years, the rate of increase during the period shows an almost continuous and, in recent years, heavy decline, and whereas between 1850 and 1860 the average annual percentage rate of growth (geometric) was 2·7, between 1890 and 1900 it had declined to 0·7, or less than 1 per cent. per annum. Another important fact is the marked tendency of coal prices in this country to increase relatively to the prices of commodities generally.

E.—*Table showing the Percentage Fluctuations in the Average Price of Exported Coal and of Commodities generally, as derived from Mr. Sauerbeck's Index Numbers; also in the Average Prices of Exports and Imports, Exclusive of Coal. In each case the Average Price in the Period* 1886–90 *is taken as* 100.

Quinquennial Periods ...	1851–55.	1856–60.	1861–65.	1866–70.	1871–75.
Coal	88·7	97·1	96·6	103·3	181·5
Sauerbeck (45 articles) ...	128·5	139·6	144·7	141·0	147·6
Exports (52 articles)[1]	132·5	145·0	145·5	136·3	145·0
Imports (88 articles)[2]	—	136·1	138·1	134·3	134·1

Quinquennial Periods ...	1876–80.	1881–85.	1886–90.	1891–95.	1896–1900.
Coal	100·6	95·3	100	110·6	115·2
Sauerbeck (45 articles) ...	120·7	113·7	100	94·9	94·0
Exports (52 articles)[1]	125·4	111 3	100	95·9	97·0
Imports (88 articles)[2]	120·6	112·8	100	91·7	87·9

The index price of coal is derived from the declared value of exports. The index numbers of the exports are the simple arithmetic averages of the index numbers of fifty-two principal exported articles, the annual average prices of which are given in the statistical abstract continuously over the period, and similarly of eighty-eight articles in the case of imports. The very abnormal price of fuel during the coal famine of the early seventies makes any comparison involving that period misleading, but comparing the index numbers of

[1] 1851–55 the average is of thirty-six articles, 1856-60 of thirty-nine articles, and from 1861 to 1875 of forty-four articles.

[2] 1856–60 the average is of eighty-three articles.

1866–70 with those of 1896–1900 it will be seen that whereas coal has advanced from a price represented by 103 to 115, prices of commodities generally have, according to Mr. Sauerbeck's index numbers, on the contrary, fallen in the same period from 141 to 94. That is to say, during the past generation, while coal has advanced in price about 15½ per cent., prices all round have fallen about 33⅓ per cent., or, speaking broadly, the price of coal relatively to the prices of commodities in general has increased by 50 per cent. If it be correct that cheap fuel is the most potent factor making for industrial supremacy, it will hardly be necessary to point out the bearing this fact has on our commercial position or to insist upon the weight that must be given to it in any discussion on our export trade in recent years.

Cheapness of American Coal.

There is yet a third and even more important point which must not be overlooked in any consideration of fiscal policy and our ability to cope with foreign competition in neutral markets. The most cursory examination of international trade statistics shows that it is the competition of the United States, and not that of the other European countries, which we may have reason seriously to fear in the near future. It is the United States which is cutting into our foreign trade, but it is for Protectionists to explain how their fiscal

nostrums will provide a remedy, and how a system which must tend to raise the cost of production, and whose avowed purpose is to raise the price of what a country produces in order to protect the home manufacturer, will enable that country to supply such produce on more favourable terms in neutral markets—on more favourable terms, be it remembered, than other countries which produce more cheaply, for unless they produced more cheaply there would clearly be no necessity for a protective tariff against their produce. I am not here taking account of the Dumping Bogey, which I confess has no terrors for me. Our exports to the protective States of Europe, and notably to Germany, have grown greatly during the last decade of the century just closed, even when coal is excluded. Our exports to the European continent from 1886–1890 and 1896–1900 have grown far more rapidly than those to our Colonies and possessions. In the interval the former increased by 25 per cent., while the latter increased by 5·7 per cent. only. In the same period, while the value of our exports, excluding that of coal to Germany, grew by 39·2 per cent., the value of similar exports to Canada fell 16½ per cent. It is in our exports to the United States that the principal decline has occurred, a decline so considerable as to almost counterbalance the increase in other directions. The most important change in the industrial situation, however,

which I think deserves attention with a view to ascertaining how far it is responsible for the increasing ability of the United States not only to supply her own needs, formerly supplied by us, but to supplant us to some extent on neutral ground, is the reduction in the cost of production of American coal. The following figures show that not only has the average price of bituminous coal fallen in the States to half of what it was thirty years ago, but that, relatively to the price of British coal, this decline is even more pronounced.

F.

Quinquennial Period.	Average declared Value at Export of British coals.	Average Price of Anthracite [1] Coal in Philadelphia.	Average Price of Bituminous (Cumberland) [2] Coal in Baltimore.
	s.	s.	s.
1851–55	8·38	16·83	15·62 [3]
1856–60	9·17	15·04	15·71
1861–65	9·11	24·87	23·04
1866–70	9·78	19·79	21·08
1871–75	15·94	17·83	19·36
1876–80	9·52	14·08	13·67
1881–85	9·00	18·50	12·42
1886–90	9·44	16·85	11·12
1891–95	10·45	15·92	9·79
1896–1900 ...	10·88	15·08 [3]	8·25 [4]

[1] Schuylkill Whiteash lump coal at Philadelphia—prices furnished by the American Iron and Steel Association for shipments beyond the Delaware Capes. Converted at 4s. 2d. the dollar.

[2] Prices from Saward's Coal Trade Annual.

[3] Average of the three years 1853, 1854, and 1855.

[4] Prices for 1900, estimated.

The output of American bituminous coal has increased nearly fivefold since 1880, and of the total production of 260 million tons of coal in the States in 1901, 201 millions were bituminous and 60 millions anthracite. The average quantity of coal produced per person employed in 1891 was 539 tons in the United States, as against 278 tons in this country, or nearly double the quantity. In 1889, the earliest year for which a comparison can be made, the respective outputs in the States and the United Kingdom per person employed were 427 and 315. When we consider how steam power multiplies the efficiency of labour and how its application to industry enables commodities to be produced under much higher wage rates at far lower cost, the decline in American coal prices is surely enough in itself without any reference to fiscal theories to account for the manifestly stronger position the United States holds to-day in the international struggle for industrial supremacy than she held a generation ago. The MacKinley Tariff may have been largely instrumental in protecting the profits of American manufacturers, but it appears to me that the true explanation of the increasing competitive capacity of the States in oversea trade is the fact that she has been able to reduce the cost of the initial motive power of industry by one half.

Increasing Demand for Coal.

My present purpose, however, is to indicate the

progress made by the great coal industry of this country during the past fifty years. Any attempt to enter exhaustively into the merits of the case of Free Trade versus Protection would obviously be out of the question within the limits of the space at my disposal. I will therefore content myself with dealing with the question of fiscal policy in relation to our export trade in coal, but even that branch of the subject, I fear, can only be discussed in a very perfunctory manner. In regard to the growth of the home demand, I will only say that it naturally follows the course of trade generally, expanding as trade expands and contracting when it contracts. Consequently every British industry that has benefited by Free Trade has in turn helped the development of the coal trade.

Coal enters as an element into the production of well-nigh every manufactured article, consequently every useful invention, every industrial improvement, every new want created, any fiscal system that increases the effective demand for manufactured commodities, furnishes an added impetus to the production of coal. Space will not permit, or I would show from past experience how even improvements in the direction of economising the consumption of fuel by extending its sphere of usefulness have been accompanied by an increased demand for coal. Wherever it is practicable to substitute steam power for horse power or manual labour it will be so substituted. A unit of power

produced even by the highest priced coal is incomparably cheaper than—only, indeed, an insignificant fraction of the cost—a similar unit produced by horse or manual labour, and this notwithstanding the fact that the useful effect obtained by any given quantity of coal is barely a tithe of its theoretical efficiency, owing to the loss that occurs in converting the heat of coal into its mechanical equivalent.

But to return to the Export Trade, let me establish, if I can, beyond doubt or question the ever-growing importance of the part coal has played in the value of British exports, and of how much more consequence the export trade in coal is to this country than it is to any of our industrial rivals.

BRITISH EXPORTS.

G.—*Exports from the United Kingdom, Inclusive and Exclusive of Coal, in Millions Sterling and* per capita *in £.*

Quinquennial Periods ...	1896-1900.	1891-95.	1886-90.	1881-85.	1876-80.
Total exports[1]	249·1	227·0	236·3	232·3	201·4
Coal, coke, and patent fuel	22·3	16·6	13·0	10·5	7·9
Total, exclusive of coal, &c.	226·8	210·4	223·3	221 8	193·5
Per capita (ex coal)	5·61	5·46	6·05	6·23	5·71

Quinquennial Periods ...	1871-75.	1866-70.	1861-65.	1856-60.	1851-55.
Total exports	239·5	187·8	144·4	124·2	88·9
Coal, coke, and patent fuel	10·5	5·4	4·0	3·1	1·8
Total, exclusive of coal, &c.	229·0	182·4	140·4	121·1	87·1
Per capita (ex coal)	7·13	5·96	4·78	4·26	3·14

[1] Including parcels post, but exclusive of ships and ships' machinery, which were not given in Board of Trade returns prior to 1899, and of which therefore no comparison with previous years can be made.

THE WORLD'S EXPORT OF COAL.

H.—*Statement showing the Shipments of Coal from the Principal Coal-Exporting Countries in* 1885, 1890, 1895, *and* 1900, *in Tons of* 2,240 *lbs.* (000's *omitted*).

Year.	United Kingdom.	Germany.	United States.	Belgium.	Japan.	New South Wales.
1885...	30,766	9,515	1,272	5,103	593	800 [1]
1890...	38,660	10,156	2,075	5,820	1,239	834 [2]
1895...	42,909	12,650	3,682	5,893	1,875	1,129 [2]
1900...	58,405	17,732	7,917 [3]	6,817	3,350	1,600 [2]

Year.	Canada.	France.	Austria-Hungary.	British India.	Other Countries.	Total, Exclusive of United Kingdom
1885...	428	677	670	1	75 [1]	19,134
1890...	639	1,135	662	27	170	22,757
1895...	992	1,140	747	81	260	28,449
1900...	1,465	1,182	1,060	543	360	42,026

These figures show that though the aggregate coal export of other countries has increased more rapidly during the past ten years than has that of Great Britain, the latter export was nevertheless at the close of the century not only considerably greater than that of the total of the rest of the world, but also that the actual as distinct from the proportionate increase during the past fifteen years has been greater. It should be observed that the bulk of the coal exported by other countries is a land export to contiguous states—much of which

[1] Estimated.

[2] In addition there was a large quantity exported to other Colonies forming the Commonwealth, which in 1900 amounted to 1,769,000 tons.

[3] From United States statistical tables.

is in the nature of an exchange, such as that between Canada and the United States, and between France and Germany—and which cannot be said to come into direct competition with the sea-borne coal of Great Britain. For instance, of the fifteen million tons exported from Germany in 1900, fourteen million was by land; while, of the 5,400,000 tons of bituminous (out of a total export of 6,971,000) exported from the United States in the fiscal year 1902, over 61 per cent. went to the Provinces of Quebec, Ontario, and Manitoba, and 10 per cent. to Mexico. If only the sea-borne trade in coal of the world be taken, that of Great Britain constitutes probably not far, if anything, short of 85 per cent. of the total. In this oversea trade Japan comes second and New South Wales third, the competition of the latter in neutral markets being far more prejudicial to us at the present time than that of either the United States or Germany.

Coal as Cargo.

But important as is the part played by coal in our foreign trade in respect to value, it is of far greater importance in respect to weight. From some very interesting statistics supplied by Mr. Williamson to the Chamber of Shipping, and supplemented in a recent letter to the press, it appears that the weight of our coal exports constituted, in 1900, 88 per cent., or nearly nine-tenths of the total

weight of all our exports, and, notwithstanding the growth in the importation of heavy and bulky articles such as corn, wood, sugar, and iron ore, during the past fifty or sixty years, the increase in the export of coal has been so large that, whereas in 1850 the tonnage of vessels entering with cargo was in excess of that of vessels clearing with cargo by 3½ per cent., or, if we go back to 1840, by nearly 25 per cent., by 1900 this excess had been converted into a deficiency of over 17 per cent., while the percentage of tonnage entering with cargo to that entering with cargo or in ballast declined from 88·1 to 73·5, and the proportion of that similarly clearing increased from 70·9 to 88·6.

I.—*Statement showing in respect to the United Kingdom at different Periods the Net Registered Tonnage, Sail and Steam, British and Foreign,* (1) *Entered with Cargo;* (2) *Cleared with Cargo;* (3) *the Percentage Entered with Cargo of that Entered with Cargo and in Ballast;* (4) *the Percentage Cleared with Cargo of that Cleared with Cargo and in Ballast;* (5) *the Percentage Entered of that Cleared in both cases with Cargo only, and also* (6) *the Weight of Exports, and* (7) *of Imports, as furnished by Mr. Williamson to the Chamber of Shipping;* (8) *the Percentage of the Weight of Export to that of Import;* (9) *the Weight of Exports, Exclusive of Coal; and* (10) *the Percentage of such Exports to the Total Imports.*

	(1.)	(2.)	(3.)	(4.)	(5.)	(6.)	(7.)	(8.)	(9.)	(10.)
	Tons.[1]	Tons.[1]				Tons.[1]	Tons.[1]		Tons.[1]	
1840	4,105	3,393	88·1	70·9	124·3	—	—	—	—	—
1850	6,114	5,907	86·1	83·8	103·5	—	—	—	—	—
1860	10,055	10,783	82·6	88·8	93·3	—	—	—	—	—
1870	14,911	16,714	82·8	90·2	89·2	15,891[2]	12,776[2]	124	3,000[2]	24½
1880	23,993	25,686	82·5	86·7	90·3	30,944	24,359	127	7,315	30
1890	28,979	33,857	78·7	90·4	85 6	46,752	29,793	157	8,525	28½
1900	36,186	43,642	73·5	88·6	82·9	65,585	40,916	160	7,734	19

[1] 000's omitted. [2] In 1869.

Had it not been for this great expansion in our export of coal, the bulk of vessels bringing us raw material for our manufactories and food for our people would have had to return without cargo and in ballast, for the weight of our exports, exclusive of coal, has for the last thirty years at any rate only been from 25 to 30 per cent. that of our imports. Indeed, it is difficult to conceive how our foreign trade could have reached the stage of development at which it has arrived had it not been for our export of coal, apart from all consideration of how far manufacturing supremacy is due to coal as the originating source. The homeward run only would have earned freight, and imports of raw material and food would have had to pay the expenses of the double journey. May I on this point quote from the very interesting American Treasury Department Report on the Coal Trade of the United States? "It must be said that in this respect (*i.e.*, the combined cost of producing and shipping the coal to the foreign port) Great Britain possesses a great advantage over this country, and whereas the weight and bulk of articles exported from this country are much larger than the weight and bulk of imports to this country, exactly the opposite is true in the case of Great Britain. Since there is no reason to expect in the near future a reversal in that relation, the advantage of the British shipper of coal over his American competitor under normal conditions becomes quite patent. Even

with the present excess of exports numerous vessels arrive in ballast at American ports; the addition of coal exports would merely add to this number."

I estimate that the total freight earned by vessels in conveying the forty-four million tons of coal exported in 1900 was not far, if anything, short of twenty million sterling. Including the cost of bunkers, and if we assume that two-thirds of this coal was exported in British bottoms, then something like sixty million sterling of our imports were paid for by coal and its carriage.

Coal means Labour.

It may be said that in exporting coal we are sending out of the country a form of capital that cannot be replaced and which is limited in quantity. That the depletion of our coal supplies is a very grave matter I fully recognise, but it is equally serious from whatever cause it arises, and for every ton of coal exported four tons are consumed at home, consequently any restriction of export could only be a very partial remedy, and would at most only postpone the evil day for a comparatively short time. Moreover, as I have already pointed out, coal enters into the production of every manufactured article, and therefore the export of such commodities indirectly involves the export of coal. For instance, every ton of pig iron requires the consumption of

something like two tons in its production, and its shipment abroad virtually means, therefore, the export of two tons of coal, while the export of a ton of wrought iron or steel means considerably more. Consequently if any restriction is placed on the export of coal on the ground that we are shipping abroad capital that cannot be replaced, logically we must place a corresponding restriction on the export of every manufactured article into the production of which coal enters. "Ah, but," I hear the Protectionist say, "coal is a raw material and assists the foreigner to compete with us in our own manufactures." Coal, I contend, is the finished article of one of the most important—in some respects the most important—industries in the kingdom. Our export trade alone gives employment at the present time to something like 200,000 colliery workmen, to say nothing of the railway men, tippers, trimmers, and others who are engaged in conveying it from colliery to port and putting it on board ship. In the case of Welsh coal not far short of 80 per cent. of its cost at the pit's mouth is made up of wages. Here is the average cost of the various items forming the expense of the production of a ton of large coal, worked out in percentages of the actual total cost at pit's mouth, in the case of the output of three steam coal collieries in South Wales for the undermentioned years; the first a year of low, and the second of high wages :—

	1897.	1900.
Wages	77·98	81·72
Stores and materials	12·67	11·87
Royalties	6·64	4·38
Rents, rates, &c.	2·57	1·84
Incidentals	0·14	0·19
	100·00	100·00

Possibly a Northumberland, Durham, Scotch, or Yorkshire cost would show a lower percentage for the item of labour, but in every case wages would be by far the biggest item and would certainly constitute over 50 per cent. of the total, and the cost of stores and materials is mainly made up in the last resort of the wages of labour.

For the use of British Ships.

In further reply to my Protectionist friend I would point out that this finished article of the coal industry is largely exported for the use of British subjects abroad, and that it is chiefly shipped as the raw material of another great industry, namely, that of shipping, in which the United Kingdom is far and away the biggest shareholder, owning as she does in her own name more than half the whole tonnage of the world. Very little of the coal exported from this country is sent abroad for manufacturing purposes. The new form of the monthly Board of Trade returns enables us to tell precisely the purposes for which our coal is exported.

The figures for the first three months of this year show that of the 14,500,000 tons of coal, coke, and patent fuel shipped, inclusive of bunkers, nearly 12,000,000, or 82 per cent., was steam coal or patent fuel, 1,394,000, or over 9½ per cent., was gas coal, a little over 2 per cent. anthracite, mainly for domestic use, 2·2 to meet household requirements, and, for all other purposes, about 3½ per cent., the latter including coke.

Jevons has shown conclusively that it is a commercial impossibility for this or any other country to secure or maintain a manufacturing supremacy on coal drawn from far distant fields. The quantity of coal we send abroad for other than steam-raising purposes does not amount to 4 per cent. of our exports. If anything further were needed to show how groundless is the alarm of those who fear that in coal we are exporting the raw material to enable foreign manufacturers to compete with us in home or in neutral markets, it is only necessary to point to the fact that of those who may be considered our industrial rivals, the United States in 1900 took from us less than 1 per cent. (0·03) of the quantity of coal she consumed, Germany 6·14 per cent., France 16·42 per cent., Russia 12·90 per cent., Belgium 6·04 per cent., Japan 1·99 per cent., and Austria-Hungary 1·08 per cent. True, Spain took 41·57 and Italy 93·56 per cent. of the coal they consumed, but by no stretch of the imagination can either country be regarded as a serious industrial rival of Great Britain. The

great bulk of our export is for the use of steamships, and it is within the mark to say that over half of our exports are for navigation purposes, and further that more than half the coal exported is for British consumption abroad.

The Carriers of the World.

We are the carriers of the world. It is payment for this service of carriage—a service not traceable in the value of our exports—that, as every one who has given any intelligent consideration to the subject knows, goes a long way to explain the excess in British imports. And this service is rendered possible, at all events is greatly assisted, by the export of coal. Anything that limits international commerce must obviously contract the demand for shipping, and consequently for coal for the use of steamers. The very aim of the Protectionist is to make his own country self-supporting and independent of the produce of other countries, in other words to limit the international exchange of commodities. Why should we buy from others what we can produce ourselves ? is his constant cry. Unless, therefore, he can show that so great an increased home consumption of coal will result from Protection as to counterbalance the loss resulting from his policy to our export and bunker trade, such a system cannot fail to be prejudicial to the local trades as a whole. I do not for a moment believe that he can show any such result. And if he could in so far as

the United Kingdom is concerned, it must necessarily mean a change that would spell ruin and devastation to South Wales, Northumberland and Durham, and other coal exporting districts, involving directly the livelihood of a million people and indirectly the welfare of as many more. That may be a good argument as against the Protectionist pure and simple, but it will not satisfy the advocate of a preferential tariff favouring our Colonies, for he will naturally contend that his policy would not restrict oversea trade but merely change its direction. The reply of the Free Trader, whether engaged in coal production or not, is that it cannot fail under any circumstances to limit oversea traffic. In the first place, even assuming that all the favourable results which the Preferentialists predict would follow, they will necessarily take time, and will involve a temporary sacrifice by the Mother Country.

Destination of British Coal.

In the next place those engaged in the production of coal for export have another objection to preferential treatment for the Colonies which, though it may be selfish and not based entirely on economic doctrine, is to them a very solid and practical one. The more speedily and complete the ideal of a self-supporting Empire is realised the worse it will be for the export coal trade of this country. The Colonies take an insignificant and diminishing fraction of our coal exports. On the other hand

K.—*Table showing relative Importance of different Markets, the Proportional Growth of those Markets, and the Increase of Bunker Shipments.*

	France, Spain, Portugal, Mediterranean, Canaries, and South Russia, &c.	North Sea and Baltic.	Brazil, Uruguay, and Argentine.	West Coast of Africa, Ascension, and St. Helena.	South Africa.	Indian Continent.	Middle and Far East, i.e., Ceylon, Straits Settlements, China, Hong Kong, &c.	British North America, United States (Atlantic) and West Indies, &c.	Peru, Chili, United States (Pacific), &c.	East Coast of Africa, Aden, Arabia, Persia, Mauritius, and Dependencies.	Total.	Bunker Shipments by Vessels Engaged in Foreign Trade.
1886–90.												
Average annual exports, 1,000 tons	12,773	8,203	1,364	298	222	721	659	583	364	257	25,448	7,311
Relative importance, from coal exporter's point of view, of various groups expressed in percentage of total	50·2	30·2	5·3	1·2	0·9	2·8	2·6	2·3	1·5	1·0	100·00	29[1]
	PERCENTAGES OF STANDARD PERIOD, 1886–90.											
1851–55	13	17	6	7	10	15	10	75	20	16	16	—
1856–60	22	28	12	13	13	21	26	107	25	33	26	—
1861–65	27	34	17	17	16	28	46	158	35	28	32	—
1866–70	35	43	32	21	16	47	51	140	49	45	40	—
1871–75	43	58	39	22	15	47	62	116	102	47	56	39
1876–80	57	70	38	35	52	71	80	128	82	48	62	56
1881–85	80	83	60	68	82	91	112	123	126	80	83	84
1886–90	100	100	100	100	100	100	100	100	100	100	100	100
1891–95	116	125	123	76	109	99	103	79	157	96	117	120
1896–1900	142	178	153	150	205	44	95	62	98	108	148	153
	QUANTITIES AND PERCENTAGES SHIPPED TO THE VARIOUS MARKETS IN 1902.											
1902.												
Quantity, 1,000 tons	21,222	15,790	2,558	297	700	192	566	1,085	487	262	43,159	15,148
Percentage of total	49·1	36·6	6·0	0·7	1·6	0·5	1·3	2·5	1·1	0·6	100·0	35·1

they are among our chief competitors in some of the far distant markets. Canada took in the year ending June 30, 1901, over five million tons of coal (anthracite and bituminous) from the United States, but practically none from us. British Columbia is our chief competitor in San Francisco and the West Coast of North America. Australia has ceased to take coal from us, and is our only competitor on the West Coast of South America.

Australia and India are, with the exception of Japan, our chief competitors at Singapore and in the East. India now takes very little coal from us, and has made serious inroads into our trade to Ceylon, while in South Africa it is only colonial coal whose competition we have to meet. The table on the preceding page shows where our coal goes, and the relative commercial importance of the different markets.

Our exports to the five foreign groups have grown from 26 million tons in 1890 to 42 million tons in 1900, while our exports to the remaining five fell from 2,600,000 to 1,600,000 during the same interval, though the supplies from other sources for these latter markets may be roughly estimated to have grown during the ten years from 2½ million to 7½ million tons. The demand that remains to us in markets east of the Suez Canal is of a special character, and for the better class of steam coal for war vessels and mail steamers. The Tyne ports, which shipped 134,000 tons to

Ceylon and the Far East in 1880, only shipped 2,000 in 1900, mainly owing to increased colonial competition.

Three-fourths of the coal shown as having gone to the American and Canadian market in 1902 was to supply the deficiency created by the great strike in the States, and must be regarded as abnormal. It is a curious fact—one, I think, that could hardly have been foreseen—that the substitution of steam for sail, and the great reduction in the cost of steam power appear to have favoured our competitors in distant coal markets rather than ourselves. Table K. shows that 85 per cent. of our coal exports now go to European markets. Altogether 42,041,000 tons were shipped to foreign countries and only 2,857,000 tons to British Colonies and possessions. That is to say, foreign countries find the market for over 93 per cent. of our exports of coal. In other words, for every 16 tons shipped abroad our Colonies only take one.

This shows how little our coal exports are indebted to the colonial trade, and how greatly they would suffer if trade were artificially diverted from its present direction to that aimed at by the Preferentialist. The bulk of our exports and imports at present require British coal in their conveyance, and that would not be so with the trade with our Colonies. Shipments from Australia would be carried largely by Australian coal, and from Canada often by American, or possibly Canadian, coal. A

cargo of wheat coming now from Russia or the Danube is conveyed by a steamer that consumes British coal on the outward and homeward journey. But the steamship carrying a cargo of wheat from the Colonies would in many cases only require British coal on the outward voyage. For our export trade in coal, therefore, I cannot help thinking that preferential trade with the Colonies would prove even more prejudicial than Protection pure and simple.

If under natural conditions our oversea trade became diverted to the Colonies, those engaged in the coal industry of this country would have no fair ground of complaint however much their interests might suffer, but it is a little unreasonable to expect them to enthusiastically support an artificial system which, if carried into effect, can hardly fail to do them grave injury.

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